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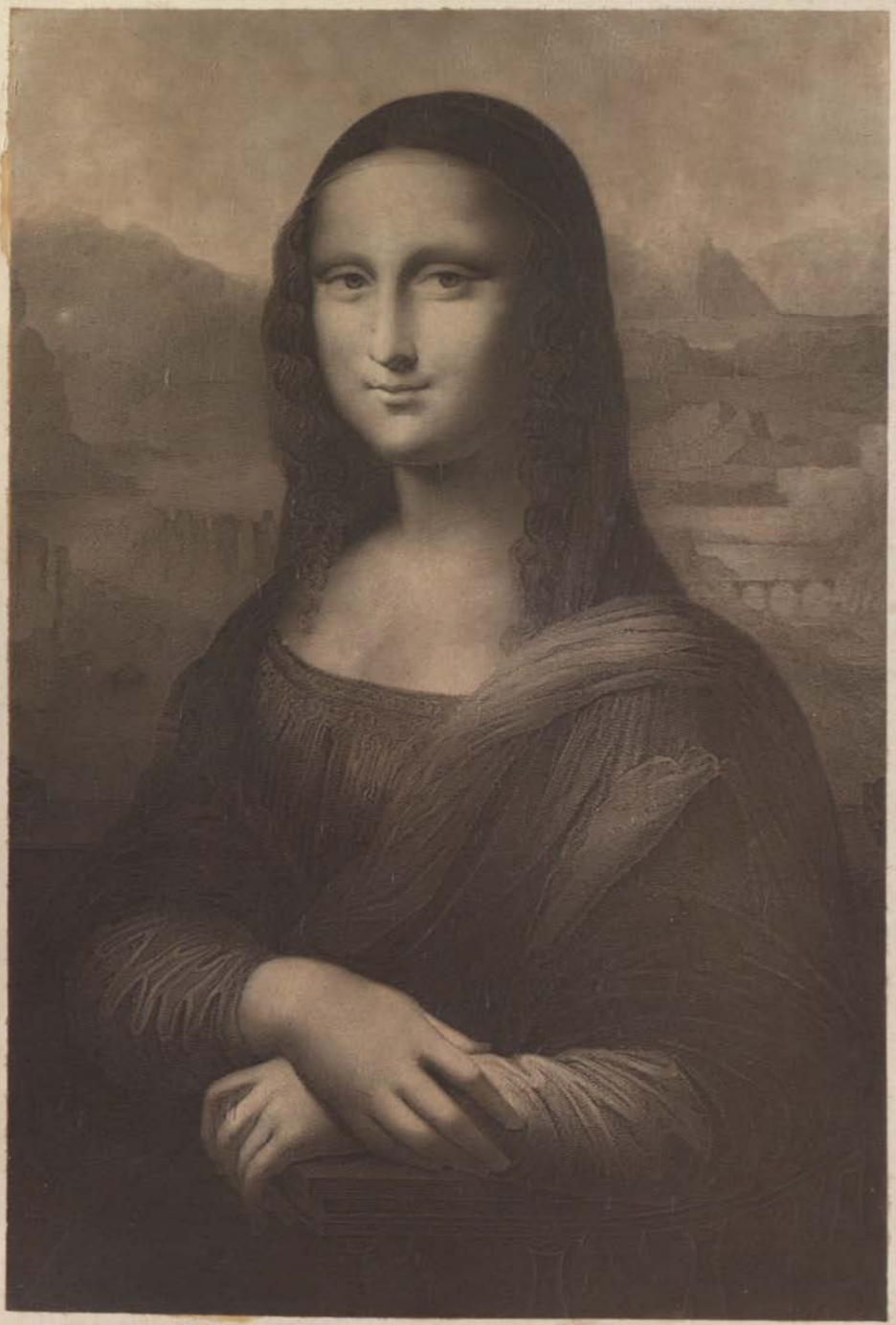
LEONARDO DA VINCI.



MONA LISA (LA GIOCONDA).

In the Louvre.

"VENIO NUNC AD FORTISSIMUM VIRUM"

LEONARDO DA VINCI

AND HIS WORKS

CONSISTING OF

A LIFE OF LEONARDO DA VINCI

BY MRS. CHARLES W. HEATON

AN ESSAY ON HIS SCIENTIFIC AND LITERARY WORKS BY

CHARLES CHRISTOPHER BLACK, M.A. AND AN

ACCOUNT OF HIS MOST IMPORTANT

PAINTINGS

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PREFACE.

IT must not be supposed that the present volume is intended to rank as a history of the life, works, and discoveries of the great Italian whose name it bears.

Such a history will, it may be hoped, be possible at no distant time, for diligent inquirers are at work, and their labours are from time to time rewarded by the addition of new facts to the valuable though fragmentary store already gained. Even now there are rumours of unpublished researches which will throw important light on Leonardo and his works. The jealously-guarded volume in which the French manuscripts are preserved is as yet unexplored, but it must surely be thrown open before long, and it can hardly be doubted that real treasures of knowledge will be found to lie buried in it.

When sufficient materials have been collected, a biographer will no doubt be found. He must bring to his task somewhat unusual endowments. His industry and critical acumen must be aided not only by true feeling and insight in art, but by great knowledge of science and of the position which science occupied in the middle ages. The genius of Leonardo was so complex, his works, suggestions, and speculations embraced so wide a circle, that to understand them all would require no ordinary powers or training.

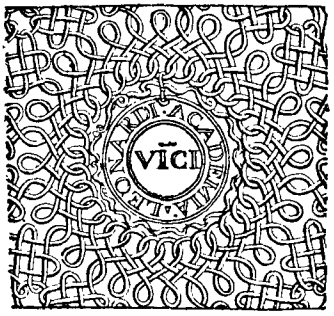
My share in the following work has been confined to the biographical sketch with which it opens. In its compilation I have taken advantage of most of the later and many of the earlier authorities. I have endeavoured to omit nothing of interest in regard to Leonardo's life, but I have carefully abstained from any attempt at criticism of his works or genius. The essay on "Leonardo da Vinci in Science and Literature" that follows my sketch is from the far abler pen of Mr. Charles Christopher Black, of the South Kensington Museum.

The classified and annotated catalogues given in the Appendix have been chiefly compiled from the works of Rigollot and Arsène Houssaye. I cannot claim any share in their preparation.

I regret that it has been found impossible to obtain a photograph of Marco Oggione's celebrated copy of the "Last Supper," to which allusion is made on page 41. This important work, that I had fondly supposed to be "accessible to English students," is, it appears, kept rolled up and stowed away somewhere at the Royal Academy, and the authorities there have declined to allow it to be unrolled for the purpose of reproduction. Surely they have chosen an odd way of disposing of so great a treasure.

M. M. H.

LESSNESS HEATH, KENT,
September, 1873.



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Nearly all these books may be consulted in the National Art Library, South Kensington Museum.

THE LIFE OF LEONARDO DA VINCI.

The best thanks of the Publishers are due to Her Majesty the Queen for her gracious permission to copy the Original Drawings by Leonardo da Vinci in the Royal Library; as well as to the Trustees of the British Museum, and to the Council of the Royal Academy, for the privilege of photographing the Drawings in their respective possession.

LIFE OF LEONARDO DA VINCI.

GUICCIARDINI at the beginning of his History tells us that since the decline of the Roman Empire "Italy had not tasted of so great and general prosperity, nor rejoiced in a condition so happy, plausible, and well governed, as was that whereon it was with great surety reposed in the year of grace 1490, and some years before and after."[1] Florence especially, a city "more mighty for the opportunity of situation, for the excellent wits and inventions of men, and for the ready means of money, than for the extent of its dominion," was at this time at the height of its prosperity, under the intelligent rule of Lorenzo de' Medici, a rule that combined the semblance of liberty with the many advantages of a beneficent despotism.

Most of the greatest painters of Italy were born during or shortly before this brief golden age,[2] the middle point of which Guicciardini places in 1490, and which may be said

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[1] "Storia d' Italia," first published in 1561. "Reduced into English by Geffray Fenton" in 1618.

[2] Leonardo da Vinci, 1452. Titian, 1477. Raphael, 1483.
Michael Angelo, 1475. Giorgione, 1478. Correggio, 1494.

to have ended with the first French invasion of Italy under Charles VIII. in 1498. It was not, however, in this time of peace, but in the stormy period that succeeded, that their immortal works were accomplished. For Italian art, that had gradually been growing in beauty and strength during the preceding century, attained its most perfect development in the first half of the sixteenth, when wars and rumours of wars prevailed everywhere, when papal excommunications, and Lutheran thunders, pagan learning and Christian faith, rationalism and superstition, light and darkness, were most strongly opposed.

Leonardo da Vinci was the earliest, and, in many respects, the greatest of the artists of this marvellous blooming time, and the versatile genius of his age—an age that produced Luther, Loyola, Erasmus, Shakespeare, Ariosto, Cervantes, Michael Angelo, Raphael and Titian—is epitomized, one may almost say, in his single life.

Yet in spite of his being, by reason of the extraordinary many-sidedness of his character and genius, a representative man of his age and his country, he remains the most unintelligible to us of all the artists of his time.

Michael Angelo in his Titanic gloom, Raphael in his short summer life, Titian in his princely magnificence, are all better known to us than the Protean figure of Leonardo, that changes into all kinds of shapes as we seek to hold it in our grasp.

The patient research and critical investigation to which his life has recently been subjected have elicited very little beyond a few facts concerning his outward existence. Of the man himself and his surpassing genius we gain perhaps a better view through Vasari's spectacles than through those of any subsequent writer. Vasari indeed grows eloquent when he speaks of the "divinely endowed" Leonardo, "the radiance of whose countenance was so splendidly beautiful that it brought

cheerfulness to the heart of the most melancholy, and the power of whose word could move the most obstinate to say 'No' or 'Yes.'"

This wonderful Leonardo, on whom "the richest gifts were showered as by celestial influence,' was born a poor little illegitimate baby in the year 1452,[1] at Castello da Vinci, a village in the Val d'Arno, near Florence. His father, Ser Piero Antonio da Vinci, was a notary of the republic and a man in good position in society. He was four times married,[2] but the mother of Leonardo was not one of the four wives. Of her no record remains beyond a statement in the family register that her name was Caterina, and that at some date after Leonardo's birth she married a certain Accattabriga di Piero del Vacca di Vinci.[3]

But although illegitimate, Leonardo appears to have been brought up in his father's family, and to have been treated in every respect as a son of the house. No difference apparently was made between him and the more lawful children, of whom there were plenty by the four wives. Many circumstances indeed tend to prove that his family was proud rather than ashamed of his relationship. And well it might be, for even in earliest childhood he evinced the most extraordinary powers of mind. We know not what his eleven brothers and sisters were like, but we can well imagine how stupid and commonplace

---

[1] The date of his birth was first made known by Dei, "Elogi di Domini illustri," who discovered it in 1746, by searching local registries. Before this it had been placed by Vasari in 1445, by De Pagave, in 1444, and by D'Argenville, in 1445.

[2] 1. to Albiera di Giovanni Amadori, in 1452.
2. to Francesca di Ser Giuliano Lanfredini, in 1465.
3. to Margherita di Francesco di Jacobo di Guglielmo.
4. to Lucrezia di Guglielmo Cortigiani.
(Gustavo Uzielli, "Ricerche intorno a Leonardo da Vinci." Firenze, 1872.)

[3] Uzielli, "Ricerche;" Albero Genealogico della famiglia da Vinci. See Appendix.

they must have seemed in comparison with Leonardo, the young lion of the family.

He learnt everything that was taught him with a rapidity that soon outstripped all teaching but his own. From boyhood he was a musician, a poet, a painter, a mathematician. Insatiable in his thirst for knowledge, he drank from every source within his reach, and when these were exhausted, sought to discover fresh ones for himself, his desire ever seeking new gratification.

"In arithmetic," says Vasari, "he often confounded the master who taught him, by his reasonings and by the difficulty of the problems he proposed."

When he played on the lute he improvised at once both words and music, and finally, was not content without inventing an instrument—a kind of lyre—for himself.

From the first also he seems to have been attracted towards natural science; but art, it was early apparent, was his most decided vocation. His father seeing this, showed some of the boy's drawings to his friend Andrea Verrocchio, who was "amazed" when he beheld them, and advised Ser Piero by all means to bring up his son as an artist. There was no better way of doing this than by sending him to study under Verrocchio himself, who was an artist held in high esteem in Florence. To Florence accordingly the young Leonardo was sent,[1] and in Verrocchio's *bottega* soon became proficient, not only in the painter's art, but in every branch of art of which design formed a part.

In many respects Leonardo could not have had a better master than the kind-hearted Verrocchio. The pupils of Verrocchio were his children, and he taught them with an ardour

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[1] Probably about the year 1470. In 1472 we find his name inscribed in the book of the Guild of Painters at Florence. (Doc. B., Uzielli, "Conte corrente di Leonardo da Vinci con la Compagnia de' Pittori.")

that few masters bestow, developing in mere workmen—as witness Vasari's story about Orsino[1]—an artistic taste, and encouraging the god-created artists to industry and perseverance.

It is unfair, Rio asserts,[2] to judge of Verrocchio's powers by the picture now hanging in the Academy of Fine Arts at Florence, which is only interesting on account of the doubtful legend that assigns the more beautiful of the two angels to Leonardo; still without doubt Verrocchio belonged to the early and crude school of Florentine art, and his paintings have not even the grace and beauty of those of many of his contemporaries, much less of his pupils.

He no doubt saw this himself, for whether it was in despair, as Vasari affirms, at seeing himself outstripped by "a mere child" like Leonardo, or from some other cause, he certainly devoted himself more to plastic work than to painting in his later life. Unfortunately most of his exquisite little votive altar-pieces chiselled in precious metal, his crucifixes, statues and golden cups, have had the usual fate of such works—been destroyed for the sake of their materials; but the one or two that remain show that in the department of religious jewellery, *orfèvrerie religieuse*, he had an admirable taste and skill, and well merited the renown that he attained in his own day.[3]

In our day we must rest content with knowing him chiefly as the master of Leonardo—no small fame in itself—and of several other only less distinguished pupils. In his workshop it was that Leonardo first became acquainted with the Umbrian master, Pietro Perugino, the predecessor and teacher of Raphael, with whom Giovanni Santi, in his rhyming chronicle, thus couples him :—

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[1] Vasari, "Vita di Andrea Verrocchio," vol. v. page 150, latest Florentine ed.
[2] "De l'Art chrétien," tome iii. [3] Ibid.

"Due giovin, par d' etate e par d' amore,
Leonardo da Vinci e 'l Perusino
Pier della Pieve, ch' è un divin pittore." [1]

These two youths, "equal in age and in love," we may well believe worked together with much satisfaction, penetrating the mysteries of perspective, and seeking for improvements in colours and mediums by means of the chemical researches that we know were zealously carried on in Verrocchio's workshop. Each was interested in the same studies, and in their after works the influence of each upon the other is more apparent than the influence of any other master.

Lorenzo di Credi, likewise, the favourite pupil of Verrocchio, must have been a fellow worker with Leonardo in Verrocchio's workshop; but although he diligently studied the art of his companion, he does not appear to have profited much by the study, for his works are entirely in the fourteenth century manner. He, in fact, learnt diligently to the end from Verrocchio, whereas his two greater pupils quickly forsook his teaching for that of nature.

Leonardo, especially, very soon outstripped all the teaching that Florence could bestow. He could never walk in the beaten paths of art, but was ever seeking some byeway of his own, some new path in the great wilderness. Simple imitation was impossible to him, he assimilated all he learnt from his predecessors and contemporaries, and brought it forth with a fresh stamp given by his own genius. Whilst in Verrocchio's shop he worked much at modelling, executing various heads in terra-cotta of women and smiling children. He also formed models in clay, on which he arranged soft drapery dipped in plaster, which he drew most carefully in black and white on fine linen prepared for the purpose.[2]

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[1] Pungileoni, "Elogio Storico di Gio. Santi."

[2] Certain specimens of these drawings Vasari tells us he possessed himself, and that they were executed in a most admirable manner.

One understands how this early practice must have helped in forming the soft, delicate modelling that is one of the great charms of Leonardo's style.

Of his youthful paintings almost all traces are lost. Not even the famous shield, *Rotella del Fico*, of which Vasari tells such a wonderful story,[1] has survived, nor the Neptune that he praises so highly, as "seeming indeed alive," and upon which the following lines were written :—

> "Pinxit Virgilius Neptunum, pinxit Homerus,
> Dum maris undisoni per vada flectit equos.
> Mente quidem vates illum conspexit uterque,
> Vincens ast oculis; jureque vincit eos.

—nor the cartoon of Adam and Eve, with its numerous animals and infinite variety of vegetation.

The Medusa, however, an imagined horror, somewhat similar, we may suppose, to the monster of the Rotella, is still preserved[2]

[1] According to Vasari, a countryman brought one day to old Ser Piero a round of wood that he had cut from a fig-tree, asking him to get it painted as a shield for him. Ser Piero gave it to his son, who forthwith "began to consider what he could paint that would most effectually terrify all beholders. For this purpose he collected in a room that no one entered but himself a number of lizards, hedgehogs, newts, serpents, dragon-flies, locusts, bats, glowworms, and every other creature of the like kind that he could find, and out of these he formed a hideous and appalling monster breathing poison and flames, and surrounded by an atmosphere of fire." When the monster was finished, which we may hope was in less time than Leonardo usually took over his works, on account of the "mortal fetor" that was exhaled by his nasty models, he summoned his father to see the work. Ser Piero accordingly went to his son's studio, but rushed out again in affright when he saw the monster, that had been purposely placed by Leonardo in a dim light, believing it to be alive. The artist was well satisfied with the effect he had produced, and gave the shield to his father to give to the countryman. But the cunning old gentleman knew the value of his son's work too well for this. He bought an ordinary shield for the countryman, and secretly sold his son's performance to "certain merchants for 100 ducats." These merchants afterwards sold it to the Duke of Milan for 300. Since then no one knows what has become of it.

[2] At least it is generally thought that the Medusa's head in that gallery is the one of which Vasari speaks.

in the Uffizj, where also we find an Adoration of the Magi, that is reckoned as one of his early works.[1]

Another painting of the early Florentine period is the one known as the Madonna della Caraffa. It was highly prized by Pope Clement VII., and celebrated for the exquisite beauty of the flowers, with dew upon them, that stood in a vase by the Virgin. This picture was still to be seen in 1846 in the Borghese Gallery, but since that time it has mysteriously disappeared. D'Argenville, before this, mentions it as being in the Vatican.

But in spite of the rare genius that Leonardo must undoubtedly have shown in these and other early works of which we have no account, he does not seem to have made any great position for himself in his native city up to the time that he was twenty-eight years of age. His father, who was notary to the Medici and other wealthy families, as well as to several religious establishments, must have been a man of some importance. He had left Vinci by this time, and had taken a house in Florence, but his son does not appear to have lived under the paternal roof, where already a third wife was installed. Probably, when he left Verrocchio, which, according to a document in the Florentine archives,[2] was not before 1477, he set up a *bottega* for himself in Florence,[3] where he continued to make experiments for which the necessary money was perhaps found by his father. It is clear, however, that he could not have been always at work, for he found time to perfect himself in all manly accomplishments, and it was doubtless by mixing in the most refined society of Florence that he acquired that wonderful

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[1] A drawing of this subject, evidently a sketch for the painting, is in the possession of M. Emile Galichon. See "*Gazette des Beaux-Arts*," 1867.

[2] Uzielli, "Ricerche intorno a Leonardo da Vinci."

[3] It is said that some important documents have recently been discovered concerning this period of Leonardo's life. Unfortunately they are not yet published.

charm of manner that we are told exercised its fascination over all who came in contact with him.

It is strange that Lorenzo de' Medici, quicksighted as he was for genius, did not seek to attach such a man as this to himself. He surely must have been aware of Leonardo's powers, but for some reason or other he was unheedful of them, and suffered the brightest of the stars revolving around him to wander into another system.

It is not difficult to surmise the reasons that may have led to Leonardo desiring to quit Florence. The strange neglect of the Medici (he does not seem to have had a single commission from any member of the family) would tend to show that he was not properly appreciated in his native city. Added to this, there may have been family difficulties, money matters, and what not, to induce a desire for change.

At all events, about 1481, when he was twenty-nine years of age, we find him writing the following remarkable letter to Lodovico Sforza, the Regent, and afterwards the Duke of Milan.[1]

"Having, most illustrious lord, seen and duly considered the experiments of all those who repute themselves masters in the art of inventing instruments of war, and having found that their instruments are useless, or else such as are in common use, I will endeavour, without wishing to injure anyone else, to make known to your Excellency certain secrets of my own; and at an opportune time, should you see fit to put them into execution, I hope to be able to effect all the things enumerated briefly below—

"1. I know how to construct very light bridges, easy to transport from one place to another, by aid of which the enemy may be pursued and put to flight. Also others of a stronger kind, that resist fire and attack. They are easy to fix and to remove. I have means also for burning and destroying those of the enemy.

[1] This letter, the most precious personal record that we have of Leonardo, is still preserved in the Ambrosian Library at Milan, Codex Atlantico, fol. 382. It was first published by Bottari, "Lettere Pittoriche," and also in Gaye's "Carteggio," and is given in Amoretti, "Memorie Storiche," with the original spelling. It is written in Leonardo's usual manner, from left to right, with an orthography as well as a calligraphy peculiarly his own. See Appendix.

"2. In case of siege I can remove the water from the ditches, and make an infinite variety of scaling-ladders and other instruments suitable for such purposes.

"3. Item. If by reason of the heights of the defences or strength of the position the place cannot be bombarded, I have other means whereby any fortress may be destroyed, provided it is not founded on stone.

"4. I have also means of making a kind of cannon that is easy and convenient to carry, and that will throw out inflammable matters, causing great affright and damage to the enemy, and putting him to much confusion.

"5. Item. By means of excavations and tortuous paths made without any noise, I can reach any given . . (point?), even if necessary to pass under ditches and rivers.

"6. Item. I can make covered waggons secure and indestructible, which entering with artillery among the enemy, will break the strongest bodies of men. Behind these the infantry can follow safely and without any impediment.

"7. I can, if needful, make cannon, mortars, and field-pieces of beautiful and useful shape, and different from those in common use.

"8. Where the use of cannon is impracticable, I replace them by mangonels, balistæ, and other engines of great efficacy, and not in common use. In short, according as the case may be, I can make varied and infinite engines of offence.

"9. And in case of the conflict being at sea, I have methods of making many engines of offence and defence, and vessels that will be able to resist the most powerful bombardment. And powders or vapours. (*Et polveri o fumi.*)

"10. In time of peace, I believe I can equal all others in architecture, in designing both public and private edifices, and in conducting water from one place to another.

"Item. I can undertake in sculpture works in marble, bronze, or terra-cotta; likewise in painting I can do what can be done equal to any other, whoever he may be.

"Furthermore, I will undertake the execution of the bronze horse, that will be to the immortal glory and eternal honour of my lord your father, of happy memory, and of the illustrious house of Sforza.

"And if any of the above-mentioned things seem to any impossible and impracticable, I offer to make trial of them in your park, or in any other place that may please your Excellency, to whom I commend myself with all possible humility."

The man must have been either an egotistic fool or a great genius who could write a letter like this. It all depends upon his ability to perform his promises. Let us see how Leonardo's performance justified his profession.

"Chi non può quel che vuol, quel che può voglia," he says in the only sonnet remaining of his poetical writings—"He who cannot do what he will, must will that which he can do;" but he himself never seems to have been fettered by this unending difficulty of willing and doing. He is ever willing, as we read in his letter, to make trial of things deemed impossible and impracticable, and indeed is chiefly occupied with such things. He is truly what Plato calls all men, "A hunter of truth," but it is the hunt and not the captured prey that delights him. Soon weary of attainment, he lets the prize in his hand escape, while he sets off on some new pursuit. This is probably what Vasari means when he says, "He would have made great progress had he not been so versatile and changeful,"[1] yet he must have accomplished much during the years in which he was growing up from boyhood and apprenticeship to manhood and mastership in Florence. It was he, we are told, who while still a youth suggested the formation of a canal from Pisa to Florence, by means of certain changes in the course of the Arno,[2] a work that was not carried out until 200 years later.[3] He likewise occupied himself with mechanics, and made designs for mills and other machines working by water. By levers, cranes and screws, he showed how weights might best be raised or drawn, how ports and havens might be cleansed and kept in order, and how water might be obtained from the lowest depths. It is clear also from his letter that he must have bestowed great attention on the science of military engineering, and have invented many engines of offence and defence. All this, besides his works in sculpture and painting! Not idle then certainly during those early years

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[1] "Avrebbe fatto profitto grande, se egli non fosse stato tanto vario ed instabile."—*Vita di Leonardo da Vinci.*

[2] Vasari.

[3] By Vincenzio Viviani, a disciple of Galileo. (Bottari.)

in Florence, though so little remains to tell us of his achievements.

Hitherto, we have regarded him chiefly as the artist and the natural philosopher, but there is another side, many more sides indeed, to his complex individuality. Whilst working at mechanics, mathematics, and physics, he yet found time to acquire all the lighter graces of society. He it was who led the dance, who improvised the song, and who paid the sweetest homage to the fair beauties of his time. Young and beautiful, strong and wise, an Adonis, not insensible to the wooings of Venus, and yet never allowing her allurements to detain him from the hunt after truth that was the one passion of his life; a horseman in whom seemed realized the old fable of the centaur, such complete mastery had he over the animal he bestrode; skilled in jousting, fencing, swimming and all other manly exercises; bending an iron knocker or horseshoe by the strength of his hand or passing his fingers with rapid lightness over his horse-shaped lyre.

Here was a man whose services any prince would do well to secure! Lodovico Sforza was astute enough to see this, and at once invited the Florentine artist[1] to his court. Thither he betook himself about the close of the year 1481,[2] to seek fortune and fame in a new country and under a new master.

Lodovico Sforza, surnamed Il Moro, not from any dark blood in his veins, but simply from his having had a mulberry-tree (*moro*) for his device, was of the usual type of Italian princes,[3]

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[1] Vasari implies that he was invited to Milan by the Duke, "who delighted in the music of the lute," because of his accomplishments as an improvisatore; but Vasari is mistaken in dates and many other particulars concerning Leonardo's sojourn at Milan, and this reason, in face of Leonardo's own letter, is absurd.

[2] Uzielli. The date had before been placed in 1483.

[3] "The ordinary vices of mankind," says Hallam, "assumed a tint of portentous guilt in the palaces of Italian princes. Their revenge was fratricide and their lust incest."

certainly not distinguished by any faint glimmering of virtue. He was the son of the warlike Francesco Sforza, a Milanese captain, who during the brief republic that succeeded the rule of the Visconti, had turned his arms against the government that had appointed him the leader of its armies, and had made himself acknowledged as Duke of Milan.

At the assassination of his elder brother, the infamous Duke Galeazzo Maria Sforza, whose blood we are told, although spilt in church, "was agreeable to God," Lodovico seized on the government, in the name, it is true, of his young nephew Gian Galeazzo, but in reality for himself. His rule had been established for some years when Leonardo entered his capital; and his court, in which the real duke, Gian Galeazzo, played a very subordinate part, was as brilliant as any in Italy, except perhaps that of the Medici. It was, indeed, his especial aim to attract thither men of learning, poets, and artists, and to endeavour, by showing a refined and cultivated taste, to gloss over the barbarity and sensuality of manners that lay beneath the gilding. Imagine what an acquisition such a man as Leonardo must have been to this aspiring prince. He seems at once to have recognized his value, and is said to have been so charmed with the eloquence of his talk, that he remarked that "his speech was as singing."

One of the first commissions, it would seem, that Leonardo received from his new patron was for the portrait of his mistress, the beautiful Cecilia Gallerani, who was at the time of Leonardo's arrival the reigning favourite.

Leonardo likewise painted for her a picture of the Virgin, for which, perhaps, she served as a model. In this picture the Infant Jesus is represented as blessing a freshly-blown rose of the sort known as Madonna roses, this being intended as an emblem of St. Cecilia. In order indeed that there should be no mistake about it, these lines were written underneath :—

"Per Cecilia, qual te orna, lauda e adóra,
El tuo unico figliuolo, o beata Vergine, exora."

This picture at the beginning of the century must have been still in existence, for Amoretti speaks of having seen it at a wine merchant's in Milan,[1] and describes the rare beauty of the Virgin and the soft finish and transparency of the flesh of the neck and breast. Unfortunately, all trace of it is now lost, and not even a copy is known to exist.[2]

The mixture of sacred and profane, of passion and piety, in this picture, has greatly scandalized Leonardo's orthodox historian, Rio, who calls it "Un empiètement indécent et presque sacrilége sur le domaine de l'art religieux;" but it was entirely in accordance with the sentiments of Lodovico, whose character, as we not unfrequently find it the case, was a curious compound of superstitious devotion and unbridled passion. Fits of reckless profligacy alternated in him with fits of ascetic gloom. At one moment on his knees before the Madonna, and at the next before one of his mistresses; preparing slow poison for his young nephew, or worse, corrupting his mind and undermining his health by purposely encouraging him in leading a vicious life; making his innocent young wife miserable by his infidelity, and then when he had killed her with neglect, spending days and nights prostrate before her tomb in a chapel hung with black. For such a man it would not seem any profanity, but rather a graceful tribute to the Queen of Heaven, to have his beautiful mistress painted "en Madone;" and probably this was the view that Leonardo and many painters of his time took, for he certainly cannot be accused above others of depicting frail

[1] "E vidilo nelli scorsi giorni presso Giuseppe Radici, mercante di vino nella contrada San Vito."—AMORETTI, *Memorie Storiche su la Vita, gli Studj, e le opere di Leonardo da Vinci*, Milan, 1804, page 31.

[2] A copy of the portrait of Cecilia Gallerani is said to be in the Ambrosian Collection, and another, painted somewhat later, Amoretti mentions as being in the possession of the Pallavicini family.

LUCREZIA CRIVELLI (LA BELLE FERRONNIÈRE).

In the Louvre.

beauties as divine ones. The Court poet, Bellincioni, wrote a most flattering sonnet on this picture and its subject.

Lucrezia Crivelli, another mistress of the Duke, was likewise painted by Leonardo, either at this time or somewhat later, and for a long time it has been thought that the painting in the Louvre known by the title of La Belle Féronnière, was the portrait of Lucrezia, but recent criticism has thrown some doubt on the subject.[1]

If not the portrait of the Louvre, this beauty, of whom it is recorded that she was "painted by Leonardo, the first of painters, and loved by Lodovico, the first of commanders," is also lost to posterity, and not even a copy is known to exist.

Of the portraits of Lodovico himself there remain a drawing in the Ambrosian, that probably represents him, and a very carefully executed pencil drawing in the Christ Church collection at Oxford.[2]

But more important works were soon set about by Leonardo than the painting of his master's mistresses. The equestrian statue of the great Francesco Sforza, that he speaks of in his letter as being able to undertake, was at last decided upon, and Leonardo began to make studies for it soon after his arrival in Milan. He had no doubt before this gained a knowledge and enthusiasm about the horse from his master Andrea Verrocchio, with whom also

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[1] Père Dan described it in his "Trésor des Merveilles de Fontainebleau," as a portrait of a Duchess of Mantua; and Crowe and Cavacaselle have lately found that Leonardo really painted a portrait of Isabel d'Este, Marchioness of Mantua, in 1500, so it is possible that la belle Féronnière was a legitimate duchess after all, and not a mistress either of Sforza or Francis I.—See "*Academy*," vol. i. page 123.

[2] It has been supposed that the portrait of a warrior in the Dresden Gallery is that of Lodovico, but there seems no foundation for thinking so. It was engraved by Hollar, in 1647, by the name of Morett, who was jeweller to Henry VIII. If this name be right, the portrait is more probably, as other critics think, by Holbein.

it was the favourite animal, and who was at this same time employed on a great equestrian statue to Colleone in Venice; and now, in view of his great undertaking, he literally devoted himself to the subject, reading ancient writers, studying ancient works of art, especially the equestrian statue of Marcus Aurelius, and, above all, familiarizing himself with every movement of the living animal and every muscle of the dead one.

The infinity of studies that Leonardo made for this purpose may be judged of by the number that still remain scattered in various collections. The most precious are in the collection of Windsor Castle, where we seem to follow the master in all his fresh ideas and changes of thought on the subject. At one time he tries a battle horse "scenting the battle from afar," at another a stately animal on parade, then a general in the calm exercise of authority, and again leading a furious cavalry charge; he even seems to have had the idea—"l'idée toute chrétienne" Rio calls it—of representing symbolically the image of Death at the same time as that of Triumph; but this no doubt was given up as too fantastic for a great national work.

Unfortunately we are ignorant which of his many ideas for this statue he finally carried out,[1] for, as every one knows, the clay model for it, which had taken Leonardo ten years to execute, was destroyed but a few years after its erection.

Many other works, however, occupied Leonardo during these ten years besides the statue of Francesco Sforza. Those, indeed, who lament over his dilatoriness and instability should bear in mind, not that he failed to execute all he conceived, but that his conceptions were so great and so many that it was next to impossible to do so. All he could do when they were such as

[1] On the cover of one of his MSS. is written in Leonardo's own hand—"A dì 23 aprile, 1490, incominciai questo libro, et richominciai il cavallo." "The 23rd of April, 1490, I commenced this book and recommenced the horse." Showing that he had already begun it once, if not many times before.

could be expressed by painting, was to leave them to his pupils to carry out. It is by this means that we have so many gracious pictures of the school of Leonardo that are often attributed to the master, and that were truly inspired by him though not executed by his hand.

Rio describes him as "travailleur infatigable," as well as "génie supérieur et universel;" and with perfect truth, in spite of the little that he accomplished—the little, that is, compared with what might have been expected from his vast genius. What was wanting in him was the talent necessary to turn his genius to account. It is the man of talent who sees the practical uses to which the inventions of the man of genius are applicable, and the praise often goes to the man who executes rather than to the man who conceives.

Leonardo was slow in execution, never able, it would seem, to please himself. He took, as we have seen, ten years over the statue of Francesco Sforza; the portrait of Mona Lisa occupied him for four years, and all his patrons seem to have complained of the difficulty they experienced in getting their commissions finished. The fact was he aimed at perfection, and was always seeking

> "That wondrous paterne, wheresoere it bee,
> Whether in earth layd up in secret store,
> Or else in heaven, that no man may it see
> With sinful eyes for feare it to deplore."

That perfect ideal beauty that neither he nor other mortal has ever yet been able to find, though many have gained glimpses of it now and then.

Leonardo, however, though not a clever practical man, was no mere theorist and dreamer. One of his most arduous works at Milan, and one that no doubt engaged a large proportion of his time, was the founding and subsequent direction of the Milan Academy—*Academia Leonardi Vinci*, the inscription says. His

numerous treatises were, there seems little doubt, composed for the benefit of this academy. They can scarcely indeed be called treatises, but are more like rough notes and practical directions jotted down hastily in order to aid in the oral instruction of pupils, like the lecture notes of a modern lecturer. He was wont, we are told, to declare that all sciences were related to art, with the exception of theology, metaphysics and law; and truly he has written on almost every branch of natural science himself. We have notes on statics, dynamics, hydrostatics, astronomy, botany, optics, mechanics, which last he calls the "paradise of mathematical sciences;"[1] theories of combustion, in which he recognizes the air as the supporter of combustion, nearly three centuries before even that approximation to the truth was arrived at; treatises on military architecture, and on many other subjects in addition to those more especially relating to art, such as the treatises on painting, on light and shade, on perspective, on anatomy, and on proportion. In all these his teaching is thoroughly practical. Nothing can be simpler than his advice or more intelligible than his directions. Unlike Turner, who, we are told, used to perplex his Royal Academy students greatly by his involved language and enigmatical instructions, Leonardo da Vinci conveyed his in the plainest terms.

"Theory," he says in one of his notes, "is the general, Practice the soldiers," and he is always exhorting art students to the diligent study of nature. "Whoever," he says, "flatters himself that he can retain in his memory all the effects of nature is deceived, for our memory is not so capacious; therefore consult nature for everything."[2] And again, "A painter ought to study universal nature and reason much within himself on all he sees, making use of the most excellent parts that compose the species

[1] "La meccanica è il paradiso delle scienze matematiche, perchè con quella si viene al frutto delle scienze matematiche."—Fol. 8 of the manuscripts.

[2] "Trattato della Pittura," cap. 20.

of every object before him. His mind will by this method be like a mirror, reflecting truly every object placed before it, and become, as it were, a second nature." [1]

One can estimate the value of his teaching in a great degree by the excellence of the painters who issued from his school. Squarcione's famous and largely attended school in Padua only produced one master of note, Mantegna, but it is not the least of Leonardo's merits that his teaching formed such men as Bernardino Luini, Andrea Solario, Marco d'Oggione, Cesare da Sesto, and Beltraffio, besides many other excellent pupils. No master, indeed, ever had such devoted followers, and many of them retained the purity of his style long after his death, in the midst of the Pagan Renaissance, when the followers of Raphael broke all bounds.

The year in which the Milan Academy was founded is not known exactly, but it was probably soon after Leonardo had settled in Milan. Very likely he suggested the idea of it to Lodovico, who readily fell in with anything likely to increase his reputation as a patron of the fine arts. He himself used, it is said, often to propose difficult problems for Leonardo to solve, such as whether painting were a nobler art than sculpture. Lomazzo tells us, in his Treatise, that Leonardo wrote a book on this subject in which he came to the conclusion that the more the exercise of an art fatigues the body the less noble it is.[2]

Many were the problems, no doubt, that engaged his mind; problems in natural science and art mostly, and not theological or metaphysical ones, such as were vexing the minds of most

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[1] "Trattato," cap. 8.

[2] "Quanto più un' arte porta seco fatica di corpo e sudore tanto più è vile e men pregiata."—LOMAZZO, *Trattato dell' Arte*, lib. ii. cap. xiv. Lomazzo was the friend and pupil of Leonardo, and has left us a few details concerning him. He was a painter in early life, but becoming blind, he took to writing on art instead of practising it.

philosophers and teachers of this time. The only schoolman whom he seems to have studied was Albertus Magnus, being attracted towards him, no doubt, by his writings on physical science and his knowledge of chemistry, a knowledge that gained for Albertus the reputation of a magician in his day. Among the ancients he devoted most study to Vitruvius, whose writings had recently been brought to light after ten centuries of neglect and had been translated and commented upon by his friend Fra Luca Paciolo. The treatise of Vitruvius on the orders of architecture is said to have especially engaged his attention. Like all men of his time, he sympathized fully with the movement that was producing a revival of the ancient learning in Italy, and although his works have not the classicism of those of many of his contemporaries, they show a full understanding of the spirit of antique grace and beauty. In an epitaph composed in his lifetime, and it would seem under his direction, by his friend Platino Piatto, he calls himself "The admirer of the ancients and their grateful disciple. One thing," he adds, "is lacking to me, their science of proportion. I have done what I could; may posterity pardon me."[1]

In 1490 Leonardo was associated with the architects who were then sitting in council on the subject of the cupola of Milan Cathedral. The cathedral had been begun in the time of the Visconti, and its building had been carried on as an hereditary profession, as it were, by the family of the Solari for several generations.[2] Lodovico Sforza took the greatest interest in its progress, and even contributed a large sum towards it; and when the question of raising the cupola was mooted, he summoned architects from all parts of Italy, and even Germany, to

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[1] "Mirator veterum discipulusque memor
Defuit una mihi symmetria prisca. Peregi
Quod potui: veniam da mihi, posteritas."

[2] Rio, "De l'Art chrétien," tome iii.

give their opinion on this important point, the same that had occupied Florence with regard to her cathedral in the time of Brunelleschi. Stormy debates took place, for the hereditary architects, and all who remained faithful to the Gothic style, wished to preserve the unity of the building by finishing it in the spirit and style in which it had been begun; whilst Omedeo, now joined with Solari, and other partisans of the new style, desired to adorn it in all the pride of the Renaissance.

It would be interesting to know which side Leonardo took in this controversy, but unfortunately we are not told. Probably it was for this purpose that he studied the orders of architecture of Vitruvius; he could scarcely have helped making many original suggestions, but perhaps they were considered "impossible and impracticable" by the architects, like his scheme for raising the church of San Giovanni in Florence, that had sunk too deep in the soil, and placing it on a substructure with steps leading up to it, which he would no doubt have "made trial of," and perhaps have succeeded in had he been permitted. Vasari tells us that he even had plans for the removal of mountains, so that they might be easily passed from one plain to another.

Another of Leonardo's labours during the first ten years of his settlement in Milan, was the irrigation of some of the dry plains of Lombardy by means of a system of hydraulics, by which he turned the waters of the Ticino to good account. In carrying out this work he had, as we learn from his notes, to visit various places in Lombardy, especially Sesto Calende, Varal Pombio, and Vegevano, where, he remarks, "in the winter the vines are buried"—*nella vernata le vigne si sotterrano.*[1]

Such were Leonardo's graver labours, but we find these interspersed with many of a lighter description. No fête, or

[1] This note was written on the 20th of March, 1492, which fixes the date of this undertaking.

joust, or wedding, could take place at court without Leonardo being made master of the ceremonies. He it was who devised the pageants, who arranged the jousts, and provided those curious "entremetz," as they were called, to the feasts of which we have so many descriptions in old chroniclers. For instance, on the occasion of the young Duke Giovanni Galeazzo's marriage with Isabella of Arragon, which took place in 1489, we find that he invented for the entertainment of the wedding party a representation of the heavens with the planets revolving therein. These opened as the bride and bridegroom approached, and discovered a person dressed to represent the deity of the planet, who recited complimentary verses composed by Belincioni in honour of the occasion.[1]

In 1492 Lodovico married the gentle and pious Beatrice d' Este, a brutal libertine married to a mild saint. He seems, however, to have truly loved his young wife, and although he by no means renounced his mistresses for her sake, her sweet influence must have had a purifying effect in his court. Leonardo superintended the fêtes given in honour of the wedding, and moreover became the architect and decorator of the apartments designed for the new duchess in the Castello della Rocca; building for her a beautiful bath room in the garden, adorned with coloured marbles and mosaics and a figure of Diana designed it is supposed by himself.[2]

A profile portrait of Beatrice d' Este, in the Ambrosian Library at Milan, painted in the hard German style, is said to be by Leonardo, but, as with most works assigned to him, this is extremely doubtful. A drawing in the same collection, of great delicacy, is more likely to be original.[3]

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[1] Amoretti, p. 41.

[2] Among his manuscripts are drawings of keys and handles for turning on water, evidently designed for this artistic bath room.

[3] Charles Blanc, "Paris à Venise: Notes en crayon."

It was at another royal wedding, that of the sister of Giovanni Galeazzo, to the Emperor Maximilian, in 1493, that the clay model of the great equestrian statue of Francesco Sforza, said to have been begun, it will be remembered, in 1483, was at last exposed to public view.[1] The enthusiasm that this work excited went beyond bounds. All Italy talked of it. Poets wrote about it, and critics extolled it as greater than anything Greece and Rome had produced of like kind. Indeed, it is evident that he was regarded by many of his contemporaries as greater as a sculptor than as a painter. Paulus Jovius, the Italian historian of that time, in the few lines that he has given to Leonardo in one of his works, scarcely deigns to mention him as a painter, but accords great praise to his sculpture, which he says Leonardo preferred to painting.[2]

Unfortunately, we can only judge of the grandeur and perfection of this great work by the admiration it called forth during the few years of its existence.[3] It was soon as completely lost as

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[1] Lazzaroni and Taccone, the poets who have described these nuptial fêtes in Latin and Italian verses, say that the statue was placed under a triumphal arch in the public place opposite the castle :—

"Fronte stabat prima quem totus noverat orbis
Sfortia Franciscus, Ligurûm dominator et altæ
Insubriæ, portatus equo."

Lazzaroni, "De nuptiis imperatoriæ majestatis . . . anno 1493." Mediolani, 1494. Quoted by Charles Blanc, "Histoire des Peintres." See also the "Ricordi" of Monsignore da Castiglione.

[2] "Plasticam ante alia penicillo præponebat." Quoted by Bossi, "Il Cenacolo."

[3] The following verses were, according to Sassi, inscribed at the base of the statue by an admiring poet :—

"Quisquis colosson principis vides, asta;
Franciscus auctor Sfortiæ sacer gentis
Ille, ille bello est maximus, toga major
Fortunæ alumnus, redditum ætheri Numen
Postquam aureum urbi sæculum tulit sceptris,
Par gentium victor Numæ Quirinoque.
Pietatem amat Mauri ac opus Leonardi
Vinci æstimat. Vidisti? Abi, hospes, et gaude."

the great works of ancient art of which we read such wonderful accounts in the writings of Greek and Latin historians. Not even one undoubtedly authentic drawing or other copy of it remains, for although so many studies for it exist, we cannot point to any one and say, "that was the idea that Leonardo carried out in his Francesco Sforza." Many attempts, however, have been made to discover some indication of his design. In a MS. entitled *Gesti di Francesco Sforza*, written by Bartolomeus Gambagnola in 1490, and now preserved in the Bibliothèque at Paris, there are three miniatures, one of which represents the hero on horseback under a portico, which is supposed by Waagen to be a copy of Leonardo's great statue.[1]

Charles Blanc also, in the "Histoire des Peintres," gives a woodcut from a drawing by Leonardo of a warrior in armour on horseback. His face, over which a visor is nearly closed, is turned to the right, so that only one eye is visible. The horse's head is turned to the left, and his left foot advances. It is a powerful drawing, certainly, but it is difficult to accept it as Leonardo's final expression of "Le Duc Sforza," the title placed unhesitatingly beneath it, or even to agree with the author in thinking that "Il serait difficile de mieux concilier le sentiment de la vie avec la dignité du grand style, la liberté et la tradition." It is not unlike one of Hans Burgkmaier's drawings from the Triumph of Maximilian.

A drawing at Windsor of a horseman in full gallop and in a commanding attitude is evidently another of Leonardo's designs for this subject, for it is placed on a pedestal, but it is impossible to say whether it was *the* design. Several other sketches of horsemen are likewise in the Windsor collection.

The question whether this statue was ever cast in bronze has

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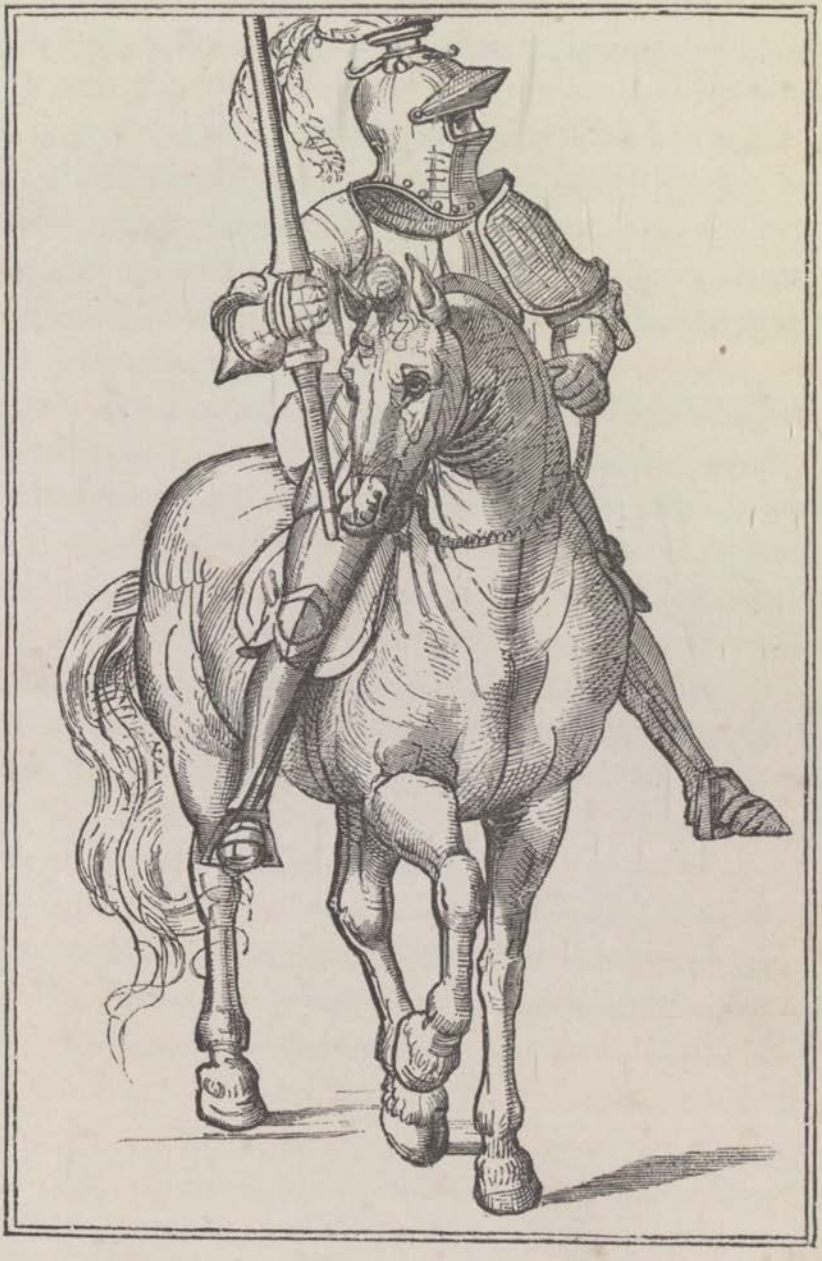
[1] "Kunstwerke und Künstler in England und Paris.'



SKETCH FOR THE STATUE OF FRANCESCO SFORZA.

To face p. 24.

been mooted, but it appears certain that it never was,[1] though for what reason does not distinctly appear. Very likely Leonardo himself, delayed, in the first instance, as was his wont, wishing still to give last touches to his *chef-d'œuvre*, and then bad times coming on, and the ducal treasury being exhausted, the money could not be found to give it its final form. There, in the clay model, lay the artist's conception, the mechanical process for its preservation could be undertaken at any time. This no doubt is what Lodovico thought, and Leonardo seems to have thought the same, for in a letter written to Lodovico that has been found among his MSS., he says, complaining of his two years' arrear of pay :—"I say nothing of the horse, because I know the times"—*Del cavallo non dirò niente, perchè cognosco i tempi.*

But unfortunately, neither of them knew the times to come, nor could foresee the fate of duke or horse.

According to Castiglione, who might have been an eye-witness of the scene in his youth, the model of the horse, on which Leonardo had worked for sixteen years, was, owing to the ignorance and carelessness of certain persons, who did not understand genius, or had no appreciation of it, "shamefully abandoned to destruction, and this admirable, ingenious work became the target of Gascon archers."[2]

This destruction, it has always been supposed, took place in 1499, when the French entered Milan, but evidence has lately been found to prove that it was at all events still in existence, if not in a perfect state of preservation, in 1501. This evidence

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[1] The only reason for thinking that it was is that Luca Paciolo, in the preface to his "Divina Proportione," speaks of the weight of the bronze as being 20,000 lbs., but probably he reckons the weight of bronze that it *would* take, not that it *had* taken.

[2] "I quali, siccome non conoscono la virtù, cosi nulla la estimano, si lasciò vituperosamente rovinare, essendo stata una così nobile ed ingegnosa opera fatta bersaglio a balestrieri guasconi."—*Ricordi di Mgr. Sabbà da Castiglione.*

consists of a letter[1] written in 1591 from the Duke Hercule d'Este to Giovanni Valla, his ambassador at Milan, in which he says, that he had ordered a clay model of a horse to be prepared on which to place his own statue in the "place" of his new town, but that it had happened that the master he had employed had died before finishing the work, and that no one else could be found in the country who was capable of continuing it. In this strait, "remembering that there existed at Milan a model of a horse executed by a certain Master Leonardo, a master very skilful in such matters, that the Duke Lodovico had always intended to have cast, we thought that if we might make use of this model it would be a good and desirable thing to cast the horse in question. Therefore, we wish you to go immediately to the most illustrious and reverend Lord Cardinal of Rouen, and make known to him the want we are in, and beg his reverend Lordship if he is not in want of it himself to be so good as to give us this model. We would not deprive him of anything that was agreeable to him, but we are persuaded that he cares but little for this work. You may add that this would be a very agreeable thing for us for the reasons above mentioned, and that we should have great contentment in doing it, remembering that the said model at Milan is, as you have told us, falling into decay day by day, because no one takes care of it. If the very rev. Lord will content us as we hope in this matter, we will send some one to bring the said model hither with all care and necessary precaution, so that it be not spoilt. Do not fail to employ all your good offices, that our desire may be satisfied by his very reverend Lordship, to whom present our offers of service and our compliments. Ferrara, 19th September, 1501."

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[1] Discovered by Giuseppe Campori. See "Nouveaux documents sur Léonard de Vinci." *Gazette des Beaux-Arts*, 1866.

Here was a good chance of saving Leonardo's masterwork for posterity, but with the ill-luck that seemed to attach itself to all he did, even this failed. The very rev. Lord Cardinal of Rouen replied to the ambassador's request that he could not give up the model without having the consent of the King of France, and the king admired it himself, without, however, it would seem, taking any steps for its preservation. It was left at Milan, and either, we may assume, fell into decay, or was destroyed as Castiglione asserts by the wantonness of war, though not, it would seem, as has hitherto been supposed, at the time when the French first entered Milan in 1499.

It was in the August of 1494 that Charles VIII. invaded Italy with his immense army, being moved thereunto, Guicciardini says, "by base persons and such as were corrupted by money." [1] Lodovico Sforza was one of these base persons, though it does not appear that he was corrupted by money; indeed, he had instead to supply it to the king. But the young duke, Gian Galeazzo, being now of full age and married to a Neapolitan princess, the King of Naples, who was also Gian Galeazzo's uncle, naturally enough demanded that Lodovico, the usurping uncle, should give up the Regency, as his government was still called, and allow his nephew to reign without interference. This, it is easy to understand, did not suit Lodovico's ambitious views, and rather than sink to the secondary position in which he had hitherto kept his nephew, he deliberately opened his country for the French army to pass through, and gave up several fortresses that were dependent on him in Genoa, in order to facilitate the French conquest of Naples, and consequent frustration of the plans formed by the King of Naples for the installment of his nephew, who appears to have been a mere tool in both uncles' hands, in power.[2]

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[1] "Storia d' Italia."

[2] Sismondi, "History of the Italian Republics."

On Charles VIII. arriving at Pavia, Lodovico went to meet him, accompanied by Leonardo, who some writers say prepared and directed the magnificent fêtes that were held on this occasion.

More important to Leonardo, no doubt, than the meeting with Charles VIII. was the meeting with the celebrated anatomist, Marco Antonio della Torre, one of the most distinguished professors of the Genoese Academy, whose acquaintance he made at this time.

Leonardo, there is little doubt, had studied anatomy long before this, but he now sought a more thorough knowledge by means of Della Torre's teaching, and in turn we may suppose taught Della Torre something of correct anatomical drawing.[1]

The importance of anatomy is constantly enforced in Leonardo's writings. In his treatise on painting he says:— "The painter who has obtained a perfect knowledge of the nature of the tendons and muscles, and of those parts which contain the most of them, will know to a certainty, in giving a particular motion to any part of the body, which and how many of the muscles give rise and contribute to it; which of them, by swelling, occasion their shortening, and which of the cartilages they surround. He will not imitate those who in all the different attitudes they adopt or invent, make use of the same muscles in the arms, back, or chest, or any other parts."[2] And again, in another of his manuscripts: "It is necessary that a painter should be a good anatomist, that in his attitudes and gestures he may be able to design the naked parts of the human frame, according to the just rules of the anatomy of the nerves, bones and muscles; and that in his different positions he may

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[1] See "Ueber Marco Antonio della Torre und L. da Vinci, die Begründer der bildlichen Anatomie." Von C. F. A. Marx. 1849.

[2] "Trattato della Pittura," cap. 43.

know what particular nerve or muscle is the cause of such a particular movement, in order that he may make that only marked and apparent, and not all the rest, as many artists are in the habit of doing; who, that they may appear great designers, make the naked limbs stiff and without grace, so that they have more the appearance of a bag of nuts than the human superficies, or rather, more like a bundle of radishes than naked muscles."

It would have been well had the anatomical painters who followed Michael Angelo borne this precept in mind. "A bag of nuts" is not a bad description of some of their contorted nudities.

It was whilst he was with Charles VIII. that Lodovico heard the news of his nephew Gian Galeazzo's death. Whether this was caused by his uncle or not is now impossible to determine. Such Guicciardini tells us was the "universal judgment of Italy" at the time, but the poisoning of inconvenient relatives was a thing of such constant occurrence in Italy, that when one died it was more natural to attribute it to that cause than any other. It seems unlikely, if Lodovico had wished to make away with his nephew, that he should not have done it before the latter had had two children born to him, and before he had got involved in a quarrel with the King of Naples.

The two infant children of Gian Galeazzo were, however, easily set aside, and Lodovico, by the desire of the council, "for the better stay of the commonweal," became Duke in name as he had long been in reality—"a burden very weighty in so dangerous a season," Guicciardini adds.

Troubles indeed were quickly coming on, and the splendid but transient day of Lodovico's fortune, in which Leonardo and others had basked, was fast drawing to a stormy close.

The first misfortune that befell the duke was the death of his young wife, which happened in 1497. This event plunged him

into the deepest melancholy, not unmingled, we may imagine, with remorse. Refusing all consolation, he shut himself up for a whole fortnight in a chamber hung with black, and then only came forth in order to visit the favourite sanctuaries and churches of his beloved though neglected Beatrice.[1]

Of these the Dominican convent of Santa Maria delle Grazie was the principal. Here also was a miraculous image,[2] like that of the church of San Celso,[3] to bring glory and profit to the convent.

The duchess from the first of her marriage had shown a decided predilection for the Santa Maria delle Grazie, and in order to please her the duke had had the convent and church reconstructed and greatly embellished; the works, according to Rio, progressing or being delayed as the pious wife or the beautiful Lucrezia Crivelli was in the ascendant. In the refectory of the convent Leonardo had previously painted the kneeling portraits of Lodovico and his wife and children at either side of a fresco of Calvary by Montorfani,[4] and he was probably already engaged on the Last Supper when the duchess died.

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[1] An official dispatch of the Venetian ambassador at Milan, thus records this change in the life of Lodovico. "El duca era venuto religioso molto e devotissimo; diceva l' oficio grande, desunava e viveva casto."—BROWN, *Ragguagli*, &c.

[2] Rio, "De l'Art chrétien," tome iii.

[3] The church for which Leonardo painted his celebrated composition of the Virgin on the knees of St. Anna, of which we have so many repetitions. The original was early replaced in San Celso by a copy by Salaino, but what then became of it no one knows. The Louvre claims to possess it, and indeed it does not seem unlikely that at the time of the French conquest of Milan it should have been carried off into France, only the Louvre example has not the peculiar subtle charm of a true Leonardo. This composition is the only one of Leonardo's painted works mentioned by Paulus Jovius, who, as before said, treats of him chiefly as a sculptor.

[4] These portraits faded even sooner than the Last Supper. The Montorfani fresco, a large and important work, is still in a good state of preservation, whereas two white spaces in the corners are all that remain to tell us of Leonardo's work.

This caused the remorseful husband to feel yet deeper interest in the place, and the more when he learnt that his poor wife, as if in anticipation of her own end, had shortly before her death spent long hours in meditation before the tomb of the good Duchess Bianca, from which she could only be taken away by force. All he could now do was to raise a magnificent tomb[1] to her memory, to cause a hundred masses a day for a month to be said for the repose of her soul, and what is of more importance to us, to proceed more energetically with the decorative works that were going on in her favourite sanctuary and last resting-place.

Even Leonardo for once laid aside his customary dilatoriness, and in less time than he took over the Mona Lisa completed the most famous of his works, the most famous picture perhaps in all the world.

The Last Supper was a subject that had not hitherto been often treated by Christian painters. Since the time of Giotto, who twice depicted it in the church of Santa Croce at Florence,[2] it had apparently fallen into disfavour, and neither the holy Angelico nor the religious painters of Siena had returned to it. The subject seemed indeed reserved for Leonardo, who made it his own for ever. It is evident that he himself felt the grand significance of this work, and gave it his deepest thought and study. We can well believe Bandello[3] when he tells us that Leonardo would often go at daybreak to the convent of Santa Maria and remain there mounted on his scaffolding, working diligently until the evening shadows caused him to leave off, never thinking of eating or drinking, so completely absorbed was he in his work. "At other times," Bandello continues, "he

[1] This was afterwards removed to the church of the Chartreuse, where it may still be seen.

[2] Twice, that is, if we accept the large fresco of the refectory as his work.

[3] It is not always desirable to believe him.

would remain three or four days without touching it, only coming for an hour or two, and remaining with crossed arms contemplating his figures as if criticising them himself. I have also seen him," he says elsewhere, "at midday, when the sun in the zenith causes all the streets of Milan to be deserted, set out in all haste from the citadel where he was modelling his colossal horse, and without seeking the shade take the shortest road to the convent, where he would add a few strokes to one of his heads, and then return immediately."[1]

Lomazzo tells us that the head of Christ was the subject of long meditation with Leonardo, that his genius was continually absorbed in the contemplation of its divinity, and that his hand appeared to tremble, he used to say, whenever he attempted to paint it.[2]

And in another place the same writer relates that, being in despair at not being able to give to his Christ the perfection he desired, Leonardo asked counsel of his friend Bernardo Zenale, who comforted him by saying, "O Leonardo, the error into which thou hast fallen is one from which only the Divine Being Himself can deliver thee; for it is not in thy power nor in that of any one else to give greater divinity and beauty to any figures than thou hast done to these of James the Greater and the Less; therefore be of good cheer and leave the Christ imperfect, for thou wilt never be able to accomplish the Christ after such apostles;" "which thing," Lomazzo adds, "Leonardo did, as may still be seen, although the picture is wholly ruined."[3]

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[1] Bandello, "Novelle," vol. iii. Matteo Bandello, the amusing but scandalous and indecent novelist of the Court of Milan, was made Bishop of Agen by Francis I. for no other reason, it would seem, than because "he told good stories." He has put one of his stories, that, namely, relating to the discreditable adventures of Fra Filippo Lippo, into the mouth of Leonardo.

[2] "Quel suo genio che nella divinità continuamente rimirava. . . . Parea che d' ogni hora tremasse quando si ponea a dipingere."—LOMAZZO, *Trattato.*

[3] Lomazzo, *Trattato*, libro i. cap. x.

In his dramatic rendering of the disciples Leonardo has shown the boldest and grandest naturalism. They are all of them real living men with passions like unto us—passions called for the moment by the fearful words of the Master, "One of ye shall betray me," into full and various play.

But in the Master himself, even if at first he sought to embody an original conception, as would seem probable from the various studies we have for the subject,[1] and attempted the passionless ideal, the godlike calm, that we find in the representations of the Greek gods, it is evident from Lomazzo's relation, and from other testimony, that he did not attain to the perfection he desired. His "hand trembled." This was no Greek god that he had to represent, but the loving Teacher of Christianity, the tender Shepherd of his flock, the Man of Sorrows, the God-Man, it is true, but the Son of Man still, with human emotions and human tears. It is not strange that he should not have satisfied himself in his conception of this ideal, nor that after ceaselessly brooding over it, he should, after all, have accepted the type founded long before in Byzantium, and which, by its very antiquity and the worship so long paid to it, was held, perhaps, even in his mind, in a certain amount of superstitious awe.[2] Such, at least, seems to me to be the case,[3]

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[1] Especially one in which Christ is represented as a beardless youth, after the classic type that we find in the early representations in the catacombs. This is mentioned by Winckelman, in his "History of Art," as being of "the highest manly beauty." It was in his time in the Lichtenstein collection.

[2] He even, it would seem, painted the costume of Christ from tradition; at least l'Abbé Guillon affirms that in painting it "he bore in mind the colour and texture of a piece of the true garment of Christ, preserved as a relic in some church in Italy." See "Le Cénacle de Léonard de Vinci," &c.; "Essai Historique et Psychologique," par Aimé Guillon, 1811.

[3] It will be seen that I still venture to hold this opinion in spite of my critic in the "Saturday Review," who calls my modest statement of it elsewhere, "a bold and bouncing exaggeration of acknowledged historic fact." "The struggle of the

judging chiefly from such studies as I have seen and from Marco Oggione's copy, which is generally acknowledged to be the most faithful translation that now exists of Leonardo's great work. In this we certainly find the well-known Byzantine type for Christ, only its ascetic sorrow is softened, and its staring ugliness changed into sweet human beauty. This is not nearly so observable in Raphael Morghen's fine engraving, in which we have an eighteenth-century rendering rather than a translation of Leonardo. Morghen's Christ is of refined, but somewhat effeminate beauty, and the melancholy of the countenance is of the Wertherian rather than the Byzantine type. It has not the true dignity of Leonardo's Christ, for Leonardo, even if he accepted the established type, left on it, we may feel sure, the stamp of his own genius.

Very different was it with the disciples. Here he was haunted by no established type, but drew from the nature he saw around him. He made many separate studies of the Apostles for the Last Supper, the most important one being the series of which ten are now in the possession of the Czar of Russia. These are probably the studies mentioned by Lomazzo as being drawn in pastel, which method he says was "much used" by Leonardo.[1]

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painter in maturing his high conception," which is the "historic fact" he adduces in proof of the originality of Leonardo's Christ, makes it all the more probable that, as Lomazzo asserts, he never matured it, but, as I suppose, accepted the established type. The same critic accuses me of exaggerating the present condition of the Last Supper, "for the sake of dramatic climax;" but the "photographs recently taken," from which he apparently derives his conclusions, were taken after repeated restorations, especially after the restoration effected by Barozzi in 1853. Before this time a photograph would hardly have revealed even its "dim outlines."

[1] "Fu molto usato da Leonardo da Vinci, il quale fece le teste di Cristo e degli Apostoli a questo modo eccellenti e miracolose in carte."—*Trattato*, lib. iii.

These valuable cartoons belonged, it would seem, in the first instance, to the Counts Arconati. From them they passed to the Marquis Gasnedi, and afterwards into the possession of the Sacredo family at Venice, by whom they were sold to the British Consul, Mr. Udney. At his death they were divided into lots, of which the first, consisting of three of the heads, one of these being the head of Christ, was acquired by an English lady,[1] while the remaining ten were bought by Sir T. Lawrence. At the Lawrence sale they passed into the hands of the picture-dealer Woodburn, who sold them to the King of Holland. Finally, the ten acquired by Sir T. Lawrence were sold to the Hermitage for 17,200 fr.

Besides these cartoons, Gerli[2] has engraved the heads of Peter and Judas from the French collection, and many scattered studies may be found in other collections.

Leonardo, as before said, must have taken less time over the Last Supper than over most of his other works; for even if we suppose it was begun before the erection of the statue—and there is no proof that it was begun as soon as this, beyond Bandello's casual remark—he could not have been many years about it; for Fra Luca Paciolo, the fellow-countryman and friend of Leonardo, speaks of it in a letter to the duke, written in February, 1498, as already finished.[3]

Perhaps this unwonted haste[4] was one of the causes of the

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[1] It is Dr. Waagen who asserts this, in his "Kunst und Künstler in England und Paris."

[2] "Disegni di Leonardo da Vinci." Milan, 1830.

[3] An entry also has been found written by the architect of the monastery, which states the following:—"1497. Item per lavori facti in refectorio dove dipinge Leonardo gli Apostare, con una finestra, 37 lire 16 sols."

[4] Many writers consider that the Last Supper was only begun after the death of the Duchess of Milan. Houssaye speaks of it as undertaken "sous l'impression d'un grand deuil."

lamentable decay of this work so soon after it was executed,[1] but the chief cause, there seems little doubt, lay in the process by which it was executed, a process of oil-painting[2] applied to

[1] The prior of the convent, according to Vasari, was by no means satisfied with the haste made by Leonardo. The story is well known, but is so good that it will bear repetition:—"The prior of the monastery was very importunate in pressing Leonardo to complete the picture; he could in no way comprehend wherefore the artist should sometimes remain half a day at a time absorbed in thought before his work without making any progress that he could see. He would fain have made him work away like the labourers about the place, without ever putting aside his brush. Not content with hurrying Leonardo, the prior even went and complained to the duke, and tormented him to such a degree that the latter was at length obliged to send for Leonardo, whom he courteously entreated to finish the work, assuring him, nevertheless, that he only did so because he was impelled by the importunities of the prior. Leonardo, knowing the prince to be intelligent and discreet, determined to explain himself fully on the subject with him, although he had never chosen to do so with the prior. He therefore discoursed with him at some length respecting art, and made it perfectly manifest to his comprehension that men of genius are sometimes producing most when they seem to be labouring least, their minds being occupied in the elucidation of their ideas, and in the completion of those conceptions to which they afterwards give form and expression with the hand. He further informed the duke that there were still wanting to him two heads, one of which, that of the Saviour, he could not hope to find on earth, and had not yet attained the power of presenting it to himself in imagination, with all that perfection of beauty and celestial grace which appeared to him to be demanded for the fitting representation of the Divinity Incarnate. The second head still wanting was that of Judas, which also caused him some anxiety, since he did not think it possible to imagine a form of feature that should properly render the countenance of a man who, after so many benefits received from his master, had possessed a heart so depraved as to be capable of betraying his Lord and the Creator of the world. With regard to the second, however, he would make search, and after all, if he could find no better, he would never be at any great loss, for there would always be the head of that troublesome and impertinent prior. This made the duke laugh with all his heart, and the poor prior, utterly confounded, went away to drive on the digging in his garden, and left Leonardo in peace." The same story is related, with slight variations, by Giraldi, who published, in 1554, "A Discourse on the Manner of Composing Romance and Comedy."

[2] That Leonardo painted the Last Supper in oils is positively asserted by Armenini, who wrote in the sixteenth century, in his "Veri precetti della Pittura."

walls that was very probably Leonardo's own invention, and the fatal effects of which he unfortunately did not foresee. The Flemish or Van Eyck method of oil-painting was known in Italy before this time; but Leonardo, unlike the painters of Venice, who at once adopted it, either did not know it or preferred his own process. He was always trying experiments with colours, oils,[1] and varnishes, and no doubt sought for the solution of that problem of oil-painting which seems to have occupied so many painters of that time, and which the Van Eycks, by their invention, whatever that may have been, at last successfully solved.

Had he only been content with fresco, his great creation would probably still live on the walls of the refectory for which it was painted. As it is, the painting that is now shown to visitors as Leonardo's "Last Supper" in the convent of Santa Maria delle Grazie has been subjected to so many restorations and repaintings, each one profaning and hiding the original

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Lomazzo also, in his "Idea del Tempio della Pittura," says, speaking of the Last Supper, "Lasciato l' uso della tempera, passò all' olio, che usava assotigliare con lambicchi."

[1] The following receipt for the preparation of pure nut oil was found in Leonardo's own writing, and is published by Amoretti in his edition of the "Trattato":—"The nuts are covered with a sort of husk or skin, which if you do not remove when you make the oil, the colouring matter of these husks will rise to the surface of your painting, and cause it to change. Select the finest nuts, take off the shells, put them into a glass vessel of clean water to soften, until you can remove the skin, change the water and put the nuts into fresh water seven or eight times until it ceases to be turbid. After some time the nuts will dissolve and become almost like milk. Put them into a shallow, open vessel in the air, and you will soon see the oil rise to the surface. To remove it in a pure and clean state, take pieces of cotton, like those used for the wicks of lamps; let one end rest in the oil, and the other drop into a vase or bottle, which is to be placed about the width of two fingers below the dish containing the oil. By degrees the oil will filter itself, and will drop quite clear and limpid into the bottle, and the lees will remain behind. All oils are of themselves quite limpid, but they change colour from the manner in which they are extracted."

more and more, that no trace of Leonardo's hand can now be found in it. Only the general composition, the perfect design, and the harmonious grouping of the figures, remain to reveal the master in the picture that has made his name famous throughout all the world.

The fate of the Last Supper has, in truth, been almost as disastrous as that of the statue to Francesco Sforza, though it has perished more slowly, and copies certainly are not wanting of it.

In 1515, when Francis I. was in Milan, it was still in a perfect condition, and the king was so struck by its beauty that he resolved, if possible, to carry it back with him to France; and for this purpose, says Vasari, "made many attempts to discover architects who might be able to secure it by defences of wood and iron, that it might be transported without injury." But the operation exceeded the skill of the architects of those times, for the method of transferring a wall painting to canvas, as now practised, was not then known, and the king was obliged to give up his coveted prize and leave it to the tender care of the Dominicans, to whom it belonged.[1] Its first injury arose from an accident—an inundation, namely—that caused the refectory to lie for some time partly under water, thus adding to the bad condition of the wall on which it was painted, and which from the first had been predisposed to damp. This happened probably before Lomazzo spoke of it as "wholly ruined" ("rovinata tutta").[2] This early decay can alone account for the shameful ill-treatment it afterwards received. The uninitiated

[1] De Pagave (quoted in the latest edition of Vasari) says that the king, finding it impossible to remove the picture, had a copy made of it by Luini, which he placed in the church of St.-Germain-l'Auxerrois, Paris.

[2] The first edition of Lomazzo, "Trattato dell' Arte," &c., was published in 1584-85. He was then blind, so could not have spoken from personal observation.

saw in it only a ruined and worthless work. The Dominican monks, at all events, seem to have been wholly unaware of the treasure they possessed. One of their priors, not content with leaving it to perish, had the barbarism to make a doorway through it, cutting off by so doing the feet of Christ and the nearest disciples. This was in 1652. In the next century the Dominican trustees of Leonardo's legacy to the world appear to have become aware of the preciousness of their charge, and accordingly in 1726 employed an inferior artist, named Belotti, to restore the picture to its former beauty. Alas! their care was far worse than their neglect. This Belotti "restored" with so much vigour, that he left nothing untouched but the sky. His work proving unsatisfactory, another bungling restorer was employed in 1770, named Mazza, a *protégé* of the Governor of Milan, who completed the destruction begun by Belotti. He in fact repainted, according to his own notions,[1] the whole picture, with the exception of the heads of the three disciples, Matthew, Thaddeus, and Simon. These were saved by the public indignation, which became so great when the full extent of the mischief wrought by Mazza was known, that the prior who had authorized it had to be banished to another convent, in expiation of his vandalism.[2] War was the next cause of ravage. In 1796, when Napoleon Buonaparte entered Italy, his troops—in spite, it would seem, of an express order to the contrary—turned the refectory of the Dominican convent into a stable, and even amused themselves, it is said, with aiming bricks at the heads of the apostles on the walls. In 1800, owing to an overflow of the canal and constant rain, the refectory was again flooded, and remained for fifteen days nearly under water.

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[1] He laid a neutral colour over the whole, in order to lay on his own colour better. Bombet, "Histoire de la Peinture en Italie."

[2] Rio, "De l'Art chrétien."

After this, the Last Supper remained unheeded until Giuseppe Bossi, the Secretary of the Academy, called the attention of Prince Eugène, then Viceroy of Italy, to its lamentable condition. All that could be done was then done. The refectory was thoroughly drained and repaired, and Bossi was commissioned by the prince to make a cartoon, the size of the original, to be executed in mosaic.[1]

To do this, he found himself obliged, like Matteini, who drew the cartoon for Raphael Morghen's celebrated engraving, to study the drawings that Leonardo had made for it, and the older and more faithful copies—to recompose, as it were, the picture from these materials, rather than faithfully to copy the ruined work that still bore Leonardo's name, but from which all life had departed. L'Abbé Guillon, before quoted, places "the last term of its ruin at the commencement of the eighteenth century." Taine, in his "Voyage en Italie," speaking of the church of Sta. Maria delle Grazie, says:—"Encore n'est-ce point l'église qu'on va voir, c'est la Cène de Léonard de Vinci peinte sur un mur du réfectoire, et à vrai dire *on ne la voit pas*. . . . . Qu'y a-t-il maintenant de Léonard dans cette peinture? Peut-être moins que dans le carton d'un maître mis en tableau par des élèves médiocres."

This was written in 1866, after its last restoration in 1853 by Barozzi, a restoration that seems to have led to the belief with many critics that Leonardo's work is not so utterly lost as was imagined. The photographs also that have been recently taken foster this notion, for they by no means show it to be in the

[1] This mosaic is now in a church at Vienna, and the cartoon in the Leuchtenberg Gallery. (Kugler.) Besides this, Bossi executed a copy in oils. More important, however, than these copies is Bossi's exhaustive work on the subject, "Del Cenacolo di Leonardo da Vinci," Milan, 1810, folio, which gives a detailed description not only of the Last Supper itself, but of all the copies that elucidate it.

ruinous condition described. But the truth is these photographs show the restored work of the restorers, but not by any means the restored work of Leonardo.

Of this, the best idea that can now be gained is, I believe, to be got from Marco Oggione's early and faithful copy, now in the possession of the Royal Academy, and accessible to English students.

This copy, of which all early writers speak in terms of highest praise, was originally painted in 1510, for the Certosa, or Chartreuse Convent at Pavia; but during the Revolution it passed into France, and was afterwards offered for sale in London, and bought by the Royal Academy for £600.[1]

Oggione painted two other copies besides this, one of reduced size for St. Barnabas at Milan, and the other for the refectory of a Jesuit convent at Castellazzo, where it still remains. The Royal Academy copy, which is here reproduced, has never been engraved or photographed before.

Many other copies besides these were made from Leonardo's Last Supper. Bernardino Luini, Leonardo's greatest scholar, repeated it several times with more or less variation; indeed, its influence extended over the whole Lombard school, and even to some extent over the Venetian; and there were few of Leonardo's pupils and followers who did not in one way or another perpetuate their master's great creation. Thus, as Fuller says of the ashes of Wickliffe, which, "being cast into a river, were by this means, like his doctrine, dispersed all over the world;" so Leonardo's Last Supper, though early doomed to destruction, remains the best known and most famous picture of Christian art. We find it alike in rich men's palaces and poor men's cottages, in splendid mosaic and in coarse woodcut, as altarpiece and as scrapbook illustration.[2]

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[1] Waagen, "Treasures of Art."

[2] A certain Sir W. E., quoted by Bombet in his "Histoire de la Peinture en

This amazing popularity, according to Rio,[1] is partly due to its "prophetic protestation" in favour of the dogma of transubstantiation, "le dogme générateur de la piété catholique;" but no one, I fancy, except such an ardent Catholic as Rio, would find in Leonardo's simple rendering of the Gospel narrative any dogma whatever. In all his works he seems to have been wholly free from theological influence, although, on the other hand, the paganizing spirit of his age had little dominion over him. His art was neither rationalistic nor ascetic, but united the two streams of thought flowing from Christian Byzantium and pagan Rome, the spiritual beauty of the one and the intellect of the other. This we see especially in the Last Supper.[2]

Italie," mentions having come across, during his travels on the Continent, no less than forty copies of it.

[1] "De l'Art chrétien."

[2] Those who desire further description and elucidative criticism of Leonardo's greatest work, will find the subject fully treated in the work before quoted—"Del Cenacolo di Leonardo da Vinci," by Giuseppe Bossi, 1810. Almost all writers on Leonardo, from Vasari downwards, have indeed expended their eloquence in writing of this work. Any remarks of mine, therefore, on its æsthetic value would be presumptuous; and indeed, as stated in the preface, such criticism is beyond the scope of this biography. For such readers, however, who may have forgotten, or who have never taken the trouble to individualize, the separate apostles, I give the following list of their names as usually accepted.

1. Bartholomew to the left of the spectator, rising and leaning on the table. 2. James the Less, with his right hand on his neighbour's shoulder. 3. Andrew, with both hands held up in sign of astonishment. 4. Peter, with a dish of fish before him, and a knife, in allusion to his cutting off the ear of Malthus. 5. Judas, with the money-bag in his hand. 6. John, who has been leaning on the bosom of Christ, but now turns in sadness away, for Peter has asked him the name of the betraying disciple, and he, repeating the question to his Master, has gained the answer, "He that dippeth his hand with me in the dish, the same shall betray me."

On the right of Christ is 7. Thomas, with his finger uplifted, as if to menace Judas. 8. James the Greater seated next Christ, on the right. 9. Philip, with his hands on his breast. 10. Matthew, turning round as if to repeat the words of Christ. 11. Thaddeus. 12. Simon.

According to Paciolo, Leonardo, besides working at the "Last Supper," was engaged, during the year 1497, with a scheme for the navigation of the Adda between Brizzio and Trezzo. This gigantic undertaking, which, on account of the rapidity of the river, its various shoals and beds of rock, presented innumerable difficulties, was only thoroughly carried out at a later date; but there seems little doubt that Leonardo at this time planned the canal of Martesana and the supports for the banks of the stream, which afterwards made its navigation practicable.

A list of drawings of the same year, written out in Leonardo's own hand, shows him busy also in his studio. Amongst these we find—"Four Projects for a Picture of St. Angelo;" "A St. Jerome for a Picture;" "A Head of the Duke;" "St. Sebastian;" "A Head of Atalanta regarding the Heavens;" "A Head of Gian Francesco Borro;" "Throats of Old Women;" "Heads of Old Men;" "Sketches of Young Men Naked;" "A Finished Madonna;" "Many Arms, Feet, and Legs, and the different Movements of these Limbs;" "Our Lady ascending to Heaven;" "An Old Man with a Long Chin;" and many other subjects.[1]

It was in this year also that his dear disciple and "son," as he called him, the beautiful Salaï or Salaino, who appears to have been partly servant and partly friend, is first mentioned.[2] He is described by Vasari as "a youth of singular grace and beauty of person, with curled and waving hair, a feature of personal beauty by which Leonardo was always greatly pleased." Many of Leonardo's angels' heads were painted, it is supposed, from this Salaï.

Francesco Melzi, the son of a noble Milanese family, was like-

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[1] Amoretti, "Memorie Storiche," page 79. Copied from fol. 317.

[2] Mentioned in a list of expenses incurred for the making of a cloak for him. "La Cappa di Salaï, addi 4 aprile 1497." (Amoretti.)

wise one of Leonardo's favourite pupils and constant companions. At the Melzi Villa, at Vaprio—a beautiful villa, that some writers say was designed by Leonardo—he often sought rest and refreshment of spirit in the society of the Melzi family, by whom he seems to have been received with the greatest affection. It was here that he retired when Milan was taken by the French in 1499.

But before the storm of war actually burst upon Milan, we find that Leonardo was suffering from its approach. The duke, in his delight at securing such an artist as Leonardo, had, in the first instance, bestowed upon him a handsome salary,[1] which we may well suppose, however, was not more than sufficient for the artist's luxurious requirements.

Even in the early Florentine time, although possessing but a small patrimony, he had lived, we are told, in grand style, "keeping many servants and horses, in which he took great delight." No doubt his establishment had been much increased at Milan. Unlike Michael Angelo, who said of himself, "that rich as he was, he had always lived as a poor man," Leonardo delighted to live *en prince*, and to bestow his favours with lavish generosity. It is not surprising, therefore, that when bad times came he should find himself embarrassed. That such was the case is proved by a disjointed fragment of a letter, apparently part of a rough draft, quoted by Amoretti,[2] in which he says that he has "received no more commissions. . . The prize for my services, because they are not to be. . . . . Not my art which I wish to change . . . given some vestments. . . . . Sir, know-

[1] Gaspare Bugati, who wrote in the second half of the sixteenth century, says, in his "Storia Universale," that Lodovico gave Leonardo 500 scudi annually; and Bandello, in the 58th of his "Novelle," affirms that he had 2,000 ducats as a salary from the duke, besides presents and donations. But it is more than probable that Bandello exaggerated. (Bossi, *Del Cenacolo.*)

[2] "Memorie Storiche," page 83, note.

ing the mind of your Excellency to be preoccupied . . to remind you of my small matters. You told me to say nothing more, but my silence may have caused you to be displeased with me. . . . My life in your service. I find myself bound to obey . . . Of the horse I shall say nothing, as I know the times. . . . . So your Excellency, as I still have to receive salary for two years. Two masters still remain with me with salaries and expenses. . . But at last I find myself in advance of the said work about 15 lire mi . . . . works of fame to enable me to show that I am . . but I don't know how I am to pay my workmen . . . . to have attained to gain my livelihood."

It was probably in consequence of this letter that the duke in 1499, shortly before his fall, bestowed upon Leonardo, a vineyard of seventeen perches, *pertiche di terra*, in compensation, perhaps, for his arrears of pay.[1]

This gift, says Houssaye, was the "adieu" of the duke to his artist.

In 1498, Louis XII., a very different monarch to Charles VIII., succeeded to the throne of France. One of his first acts was to lay claim, as the grandson of a Visconti, to the duchy of Milan, and to enforce his claim by arms. Lodovico Sforza, abandoned by all his allies, and his army dispersed, fled from Milan with his children and treasure at the approach of the French king, who entered the abandoned city without opposition on the 2nd of October, 1499. Lodovico made a futile attempt in the following year to regain his dominions, but being betrayed by his army was taken prisoner by the French general, La Tremouille, and was kept in close captivity at Loches until the end of his life, ten years afterwards.

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[1] G. L. Calvi, "Notizie dei princip. prof. di Belle Arti." Milan, 1869. Archivio di S. Fedele at Milan. The deed of gift of this vineyard has been recently found, and is given at length in Uzielli, "Ricerche."

Leonardo during these events took refuge in the Melzi Villa at Vaprio, where in accordance with the calm, philosophical maxim that we find inscribed on the cover of one of his manuscripts—"Flee from Storms"—he waited for some time to see the turn that affairs might take; but on the final defeat of his patron, he with his friend Luca Paciolo, and his favourite Salaï, set out to return to Florence, where we find them established early in 1500. This is proved by the deposit books of the Hospital (Spedale) of Sta. Maria Nuova, which show that, less improvident than might be supposed, he had forwarded to Florence 300 florins on the 14th of December, 1499, by letters of credit drawn upon Piero di Gino Capponi, and on the same day another 300 florins drawn upon Taddeo Gaddi.[1] On the 24th of some month (probably April) in 1500, he withdrew 500 florins from his account at Sta. Maria Nuova, being at that time in Florence. He could not, therefore, as Crowe and Cavalcaselle have surmised,[2] have delayed long in his return to Florence after leaving Milan; though it is quite possible—indeed, it would seem to be proved by the letter quoted by these historians, from Lorenzo de Pavia to the Marchioness of Mantua—that he was in Venice on the 13th of March, 1500, and it is not unlikely that he received the commission whilst there to paint the portrait of the Duchess of Mantua, even if he did not absolutely paint it at that time.[3]

When Leonardo da Vinci returned to Florence, after nineteen years' absence, he found it still bleeding from the wounds that the struggles of factions, ending in the martyrdom of Savonarola in 1498, had inflicted. The Piagnoni were sad and dispirited. Baccio della Porta had entered the monastery of San Marco,

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[1] Uzielli, "Ricerche," Doc. B. x.

[2] See "Two last years in the Life of Leonardo da Vinci," "Academy," vol. i.

[3] See note, page 15.

and had not as yet recommenced painting as Fra Bartolommeo; Lorenzo di Credi, Leonardo's fellow-pupil under Verrocchio, had also fallen into despondency. Lorenzo de' Medici was dead, and the Medici banished; but this did not hinder them from perpetually plotting against the Republic, which was menaced by dangers without and within, although by some wonderful chance it managed, at this momentous juncture, to maintain peace and freedom when almost all the rest of Italy was enslaved or at war.

Many, indeed, were the changes, both political and social, that Leonardo must have seen when he once more took up his abode in his native city. His fame, however, had long been fully established, and Florence was proud to welcome him back, although Michael Angelo, who was a child, and the youthful Raphael, who was not even born when he left the city, were already in the field against him. Perugino, his old friend and fellow-pupil; Botticelli, whom he speaks of in the "Trattato" as his friend, Filippino Lippi, the Bolognese Francia, Luca Signorelli, and several other men, had also acquired a reputation in his absence; yet Leonardo seems to have been readily admitted, even by the artists themselves, as the greatest master of them all. Only with Michael Angelo could rivalry be imagined, for the modest young Raphael, when he came to Florence to see Leonardo's work, never dreamt of rivalling, only of imitating the great master, which he did most successfully, as we see in several of his Madonnas of this period.

There seems no reason to discredit Paciolo's statement, that when he and Leonardo returned to Florence together in 1500, they continued to share the same abode, as they had done in Milan during the last three years of their stay.[1]

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[1] See Gaye, "Carteggio," and "Kunstblatt," 1836. "Leonardo da Vinci, fiorentino, nella città de Milano quandi ali stipendii dello Excellentissimo Duca di

Paciolo had written his book before this time, and Leonardo had probably made the drawings for it; but the book itself was not published until 1509, when Lodovico having fallen, it was finally dedicated to Soderini, then Gonfalonier of Florence.

Leonardo's first commission in Florence was one that had been previously given to Filippino Lippi. It was for an altarpiece in the church of the Servites. "Filippino," says Vasari, "like the amiable man (*gentil persona*) that he was, withdrew at once when he found that Leonardo would undertake the work;" and the monks took Leonardo and his household into the convent, supplying all expenses while the picture was in progress. But Leonardo, after his usual style, kept them a long time without doing anything. "At length, however, he prepared a cartoon, with the Madonna, St. Anna, and the Infant Christ, so admirably depicted, that it not only caused astonishment in every artist who saw it; but when finished, the chamber wherein it stood was crowded for two days by men and women, old and young, as if going to a solemn festival, all hastening to behold this marvel of Leonardo's, which amazed the whole population."[1]

The cartoon in which the Florentines took so much interest is the one that is now in the Royal Academy, and that many readers may remember to have seen in the first exhibition of old masters at Burlington House.[2]

The cartoon was all that the Servites could get from Leonardo, whose impatient genius loved, as we know, to conceive rather than to execute, and they were, after all, obliged to apply

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quello Lodovico Maria Sforza, 1496, fino al 99, donde poi da siemi per diversi sucessi in quelle parti ci partemmo e a Firenze pur insiemi traemmo domicilio." —*Divina Proportione.*

[1] Vasari, "Vita di Leonardo da Vinci."

[2] It was taken with him by Leonardo to France, but was afterwards restored to Italy, and was at one time in the possession of Aurelio Luini, son of the painter Bernardino Luini.

THE VIRGIN SEATED IN THE LAP OF SAINT ANNE.

From the Cartoon in the Royal Academy, London.

to Filippino Lippi to paint their altar-piece. He, however, died before it could be finished, and it was finally accomplished by Perugino.

The lovely group of St. Anna and the Virgin and Child, in this cartoon, seems to have been a favourite conception with Leonardo; we find it with variations in several of his drawings, and the charming St. Anne and Virgin of the Louvre, the best known of all the repetitions of it, if not by him, was undoubtedly painted by one of his pupils from his design.

Besides this commission from the Servites, we find Leonardo occupied with the portraits of two noble Florentine ladies, whose beauty (fortunately handed down to us) was highly extolled by their contemporaries. One of these was the lovely and modest Ginevra Benci, daughter of Amerigo Benci, whose exquisite grace still charms us in two of Ghirlandaio's frescoes in the Sassetti Chapel.[1] Unfortunately, there hangs considerable doubt over Leonardo's portrait of this celebrated beauty. It is said to be the picture formerly in the Niccolini Gallery, and now in the Pitti Palace; but when one thinks of the Mona Lisa, painted about the same time, one finds it impossible to accept the picture of the Pitti as the "cosa bellissima" spoken of by Vasari.

But if there be a doubt about the Ginevra Benci, no shadow of critical suspicion has ever fallen on the supreme Mona Lisa, "La Joconde," of the Louvre. Critics have indeed well-nigh exhausted themselves in admiration of this work. One of the latest[2] thus writes of it in words that seem set to it, like the verses of a poet to the music of a great composer. "La Gioconda is in the truest sense Leonardo's masterpiece, the revealing instance of his mode of thought and work. In suggestiveness only the Melancholia of Dürer is comparable to it, and

[1] In the Visitation and the Nativity of the Virgin.

[2] W. H. Pater, "Studies in the History of the Renaissance."

no crude symbolism disturbs the effect of its subdued and graceful mystery. We all know the face and hands of the figure set in its marble chair in that cirque of fantastic rocks, as in some faint light under the sea. Perhaps of all ancient pictures time has chilled it least. From childhood we see this image defining itself on the fabric of his dreams; and but for express historical testimony, we might fancy that this was but his ideal lady, embodied and beheld at last. What was the relationship of a living Florentine to this creature of his thoughts? By what strange affinities had she and the dream grown thus apart, yet so closely together? Present from the first, incorporeal in Leonardo's thought, dimly traced in the designs of Verrocchio, she is found present at last in Il Giocondo's house. That there is much of mere portraiture in the picture is attested by the legend that by artificial means, the presence of mimes and flute-players, that subtle expression was protracted on the face. Again, was it in four years and by renewed labour never really completed, or in four months and as by stroke of magic, that the image was projected? The presence that thus so strangely rose beside the waters is expressive of what in the ways of a thousand years man had come to desire. Hers is the head upon which all 'the ends of the earth are come,' and the eyelids are a little weary. It is a beauty wrought out from within upon the flesh, the deposit, little cell by cell, of strange thoughts and fantastic reveries and exquisite passions. Set it for a moment beside one of those white Greek goddesses or beautiful women of antiquity, and how would they be troubled by this beauty, into which the soul with all its maladies has passed? All the thoughts and experience of the world have etched and moulded therein that which they have of power to refine and make expressive the outward form, the animalism of Greece, the lust of Rome, the reverie of the middle-age, with its spiritual ambition and imaginative loves,

the return of the pagan world, the sins of the Borgias. She is older than the rocks among which she sits; like the vampire, she has been dead many times, and learned the secret of the grave; and has been a diver in deep seas, and keeps their fallen day about her; and trafficked for strange webs with Eastern merchants; and, as Leda, was the mother of Helen of Troy, and, as Saint Anne, the mother of Mary; and all this has been to her but as the sound of lyres and flutes, and lives only in the delicacy with which it has moulded the changing lineaments and tinged the eyelids and the hands. The fancy of a perpetual life, sweeping together ten thousand experiences, is an old one; and modern thought has conceived the idea of humanity as wrought upon by, and summing up in itself, all modes of thought and life. Certainly Lady Lisa might stand as the embodiment of the old fancy, the symbol of the modern idea."

Many romances have been framed concerning this mysterious Mona Lisa, this "vampire" with the "ineffable smile." Was the painter in love with the beauty he painted? Many writers imagine so, who think, as they do also with Raphael's Fornarina, that only love could have produced so perfect a work. But, as Pater hints, Leonardo seems to have had a presentiment, an "Ahnung," as the Germans call it, of this supreme beauty long before he painted her actual portrait; and probably all the mystery and glamour of that wonderful likeness was given by the painter's own imagination. Seen in the light of common day, by an ordinary portrait painter, she would have been represented as a beautiful woman and nothing more; but seen in the light of a painter's fancy, she is presented to us as a sweet but perplexing poem.

Leonardo, as before stated, was four years over this portrait, and then, in his own estimation, left it imperfect. In order to preserve that smiling expression, "he took the precaution," says

Vasari, "of keeping some one at hand while she was sitting, to sing or play on instruments, or to jest and otherwise amuse her." The smile of Mona Lisa, however, was never produced by a jest. It is the painter's smile, and not the sitter's. Its "ten thousand experiences" are his, and are all summed up in the words of the preacher, "Vanitas vanitatum."

Francesco del Giocondo, the husband[1] of Mona Lisa, does not seem to have commissioned this portrait; at least, it remained with the painter until he sold it to the French king for 4,000 gold crowns, an enormous sum at that time.[2]

In 1502 Leonardo was appointed by Cæsar Borgia, who was at that time hoping to found an Italian kingdom, his architect and general engineer. In this capacity he travelled through Romagna (of which state Cæsar Borgia had been created Duke by his father, the detestable Pope Alexander) and Urbino, designing fortresses, machines of war, and, in general, surveying all the strong places in Borgia's acquired dominions. In his manuscripts, and scattered among his drawings, have been found many allusions to this journey. For instance, on the 30th July, 1502, he mentions being at Urbino, and designing "a dove-cot, a staircase, and several ramparts to the citadel." On the 1st of August he is at Pesaro, making sketches for various machines; on the 8th, at Rimini, where he notices the harmonious sound of the water of a fountain; on the 11th, at Cesena, designing a house and a waggon for the better means of transport of the

[1] It has been discovered that she was his third wife, so he could not have been very young.

[2] The picture has been supposed to be one of the two to which Leonardo alludes in the following passage of his letter to Marshal de Chaumont:—

"E portare con mecho due quadri di due Nosstre Donne di varie grandezze le quale son fatte pel cristianissimo nostro re."

As, however, these pictures were clearly painted for the French king, it appears quite as likely that they were Madonna pictures as that they were portraits of Florentine beauties, especially as "Nosstre Donne" is written with capitals.

grapes; and on the 6th of September he designs the Port of Cesenatico. After this he travels through Imola, Faenza, and Forli, and thence by Bologna to Florence, from whence he again sets forth for another excursion towards the south, by Chiusi, Pérouse and Foligno. At Siena, he studies and describes a curious sort of clock, and at Piombino is struck by the regular cadence of the waves beating on the sea-shore.

Thus, with a mind still open to the teachings of Nature, we find him ever learning and ever inventing. The falling waters of a fountain, the harmonies of the waves, set him thinking of the forces by which their movement is governed, and lead to the speculations on the subjects that we find in several of his treatises.

As Cæsar Borgia had no employment for Leonardo's artistic powers, his mind being entirely occupied with his great military schemes, it is fortunate perhaps that Leonardo did not remain long in his service. In the August of 1503, Alexander VI. and his son Cæsar accidentally drank of some poisoned wine that they had prepared for one of their guests. The father died, and the son, when he at last recovered from its effects, found that Julius II., the new Pope, was prepared to counteract his ambitious projects. Very soon he lost all his sovereignties, and, passing into Spain, no longer needed a military engineer.

By the 25th of January, 1503, Leonardo must have been back in Florence, for he was then elected with other artists to give his opinion as to the fitting position in which to place Michael Angelo's gigantic statue of David. On the 4th of March and the 14th of June of the same year he drew out another fifty florins from the Spedale; and on the 24th of July he was appointed by the Balia of Florence to go to the camp below Pisa, to consider the project of the deviation of the waters of the Arno, for the defence of the hill from the attacks of the enemy. In October we find his name inscribed in the red book of the Company of Painters; and on the 1st of September and the 21st of Novem-

ber he again drew out his favourite sum of fifty florins from the Spedale of S. Maria Nuova.[1]

About the end of 1503, or beginning of 1504, Leonardo went to Rome,[2] and it is probable that during his stay there at this time he executed the much disputed Virgin and Child, with donor, of the Cloister of St. Onuphrius.[3] But on the 27th of April he was again back in Florence, as we find from the customary withdrawal of fifty florins from his account.

It was perhaps to atone for past neglect that the government of Florence now determined to entrust Leonardo with a great work. Pietro Soderini, who had been elected Gonfalonier for life, in 1502, was Leonardo's friend; and when it was determined that the walls of the hall in which the Grand Council of Florence met should be covered with paintings, it was probably he who suggested that Leonardo should be employed for that purpose. At all events, early in 1504 we find that Leonardo received an order to paint one wall of the Great Hall of the Palazzo Vecchio, while to Michael Angelo, whose David had already crowned him with fame, was assigned the other.

With this commission began the rivalry of the two great artists of Florence—a rivalry that it is to be feared was fostered into jealousy at last; but more from the strong party feeling of their followers, we may hope, than from any unworthy motives in the masters themselves.

Michael Angelo, as all know, chose for his subject an incident in the Pisan campaign, and represented a group of Florentine soldiers surprised by the enemy while bathing in the Arno,—a

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[1] See Document B. X. and XI. printed in Uzielli "Ricerche intorno Leonardo da Vinci."

[2] Gaye, "Carteggio," vol. ii. 89. Uzielli also proves this journey by the record of a payment made by Leonardo.

[3] This being painted in fresco, has lasted far better than his other wall painting, the Last Supper. It is the only composition of the kind ascribed to him.

scene that gave him full opportunity for displaying his wonderful knowledge of the naked human form.

Leonardo, on the other hand, who, as we have seen, had especially studied the anatomy and character of the horse, depicted, in the most masterly manner, a troop of horsemen fighting round a standard. Fighting, indeed, seems almost too tame a word. They are raging like wild beasts at bay rather than men. Horses and warriors struggle together in indistinguishable confusion. Men in strange armour grapple with each other in deadly combat; all are animated by the fearful lust for blood.

Such, at least, is what we see in the celebrated copy, preserved to us by Rubens, of the central group of the great cartoon; but we know not how much of his own spirit Rubens may have infused into it, for the scene was one after his own heart, and he may possibly, as in his rendering of the Last Supper, to which he has given an entirely Flemish character, have so Rubenized the original, that Leonardo would not know it for his own work. Still, whether by Rubens or Leonardo da Vinci, The Battle of the Standard, as it is called, is a magnificent work, worthy of the reputation of both masters.[1]

During the time that Leonardo was engaged on his cartoon, the so-called Hall of the Pope, in S. Maria Novella, was assigned to him as a workshop, while Michael Angelo worked in the hall of the Hospital of the Dyers at S. Onofrio.[2]

But Leonardo, as usual, delayed over his work; and it was not until the end of 1506 that the rival cartoons were finally laid before the Signory and publicly exhibited in Florence.

Great was the excitement and vehement the discussions in art-loving Florence about the respective merits of these two great works. Every artist took part with one or the other master.

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[1] It has been very effectively engraved by Edelinck.

[2] Grimm, "Life of Michael Angelo."

"It was," says Houssaye, "une lutte de Titans"—a "duel au crayon" between Leonardo and Michael Angelo.[1]

The young Raphael was a looker-on at the duel, for, attracted perhaps by this very contest, he had returned to Florence in this year. His warm admiration of Leonardo was untinged by any jealousy; in truth, at this time no rivalry could have existed between them, Raphael's powers not having yet developed.

Vasari tells us that Leonardo designed an elaborate scaffolding, to be used in the execution of his cartoon, that could be increased in height by being drawn together, or rendered wider by being lowered. All was indeed ready for beginning the painting; but as in the Last Supper, he made the fatal mistake of using oils instead of fresco. After he had prepared the ground, he found the colours sink into it to such a degree that he was obliged to abandon this mode of execution, and he never attempted any other. Thus the wall-painting of the Palazzo Vecchio, begun with so much ardour, was left unachieved, like so many other of Leonardo's great works. He was content with having *conceived* it.[2]

But Soderini and the people of Florence were by no means content, and he was reproached with having deceived them, and

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[1] So long as these celebrated cartoons were in existence, they remained, as Benvenuto Cellini affirms, "a school for the world;" but unfortunately both quickly perished. Michael Angelo's, it is said, was cut in pieces, though the story of this having been done by Bandinelli, through jealousy, is unworthy of credit. Only a small copy, and the well-known group engraved by Marc Antonio, remain to tell us what it must have been. Leonardo's was destroyed even sooner, but it is not known how.

[2] In one of his manuscripts we find the history of the Battle of Anghiara, and his plan for representing it in painting, written out in his own hand, with the names of all the chiefs engaged. In the "Trattato" also he gives directions "How to compose a battle," and says, "that some may appear disarmed and beaten down by the enemy, but still fighting with their fists and teeth, and endeavouring to take a passionate though unavailing revenge. . . . A wounded soldier may also be seen falling to the ground and attempting to cover himself

having received money for that which he had not accomplished. His high spirit could not brook this insinuation, and he at once by the help of his friends collected the sum that he had already received, and took the money back to Soderini, who, however, refused to accept it. Before this, Vasari relates that being offended at Soderini's treasurer paying him a certain amount that he had to receive from him in copper money, he refused it, saying he was "no penny painter:" *Io non sono dipintore da quattrini.*

This business of the cartoon and other irritations, one of which we may assume to have been the failure of his project for diverting the course of the Arno, which had been tried at an enormous expense, no doubt made a residence in Florence at this time anything but agreeable to the magnificent Leonardo, who having been first in Milan, was ill disposed, as we may imagine, to see younger men aspiring to equal honours in his native city. He was now fifty-four years of age, and desired, perhaps, to reap the fruits of his former achievements rather than to toil for fresh laurels.

Besides, his father, to be near whom in his old age may have been one of his chief inducements to return to Florence, had died in 1504,[1] so that there could have been no family ties to detain him, except those existing between him and the ten sons and two daughters of Ser Piero, five of whom were children of

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with his shield, while an enemy bending over him endeavours to give him the finishing stroke." Leonardo evidently followed his own instructions in the painting of this battle-piece. The Battle of Anghiara was not in reality a very terrible affair, for we learn from Machiavelli that there was only one man killed in it. ("Machiavelli," book v.)

[1] Leonardo has left a record of this event in one of his manuscripts in the British Museum:—"Addì 9. di luglo 1504, en mercholedì a ore 7 morì Ser Piero Davinci notaio al palagio della potestà, mio padre a ore 7. Era di età d'anni 80. Lasciò 10 figloli masscj et 2 femjne." MSS. vol. N. f. 70. "Mathematical Notes" in Brit. Mus. The old man, however, was not 80, but only 77, when he died.

the fourth wife, and must have been born during Leonardo's sojourn in Lombardy. It would seem, besides, from a subsequent lawsuit, in which Leonardo disputed his father's inheritance, that the ten lawful children were not disposed to recognize the illegitimate one as belonging to the family, although Ser Piero always did so.

All these circumstances taken together, it is not surprising that Leonardo should have looked back with regret to the pleasant days in Milan, and that on receiving an invitation from the Maréchal de Chaumont, the French governor of Milan, he should have once more returned to his adopted city and his many friends, although it had passed in his absence into the hands of a new master.

This new master, Louis XII., was far less of a tyrant than the native dukes, both Viscontis and Sforzas, had been. He was extremely anxious to conciliate his new subjects, and the governor he set over them was, perhaps, the best whom he could have found for his purpose.[1]

On his return to Milan, therefore, which was probably about the close of 1506, Leonardo found everything proceeding in the old way, only under a new *régime*. The building of the cathedral had recommenced, the canal of Martesana was being continued, and everything wore a look of prosperity under a king who had acquired the name of "Père du Peuple."

Leonardo himself was warmly welcomed and appreciated by De Chaumont, and would no doubt have willingly taken up his abode once more in his adopted city, but he could not now do this, for he was still in the service of the Signory of Florence, and before long he was reminded of his duties and desired to return.

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[1] Charles d'Amboise Maréchal de Chaumont, is spoken of by the historian Mézeray as "just and prudent, courteous to gentlemen and gracious to the people, but very exact in all things."

But Louis XII. who seems to have been an intelligent patron of art, was by no means minded to let such a painter as Leonardo go. He had heard, it would seem, of his return to Milan, and having seen some of his works, was desirous, as we find from a conversation reported by Francesco Pandolfini, the ambassador of the Republic of Florence at the Court of France, to retain him in his service. Pandolfini writes as follows :— "Blois, 22 January, 1507. Finding myself this morning in the presence of the most Christian King, his Majesty called me and said, 'Your lords must do me a service. Write to them that I desire to make use of their painter, Master Leonardo, who is now at Milan, and that I wish him to do certain things for me. Do this in such a way that their lordships enjoin him to serve me promptly, and tell him not to depart from Milan before my arrival. He is a good master, and I desire certain things by his hand. Write to Florence at once, and in such a way as to obtain the desired result, and send me the letter.' . . . All this," adds Pandolfini, "came from a little painting by his hand that has recently been brought here, and which is judged to be a very excellent work. In the course of conversation I asked his Majesty what works he desired from him, and he answered, 'Certain small pictures of Our Lady and others, according as the idea occurs to me; perhaps also I shall get him to paint my portrait.'"[1]

De Chaumont also, who fully recognized Leonardo's value, and who soon acquired a real friendship for him, appears to have written at this time to his friend Piero Soderini, to beg him to permit of Leonardo's longer sojourn in Milan.[2]

Nevertheless, not at the insistance of the Signory, but, as it would seem, for his own private matters, Leonardo returned for a short time to Florence in 1507. His uncle, Francesco da

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[1] Gaye, "Carteggio," vol. ii. 95.

[2] Ibid.

Vinci, had died in this year, and Leonardo claimed part in his estate, as well as in that of his father, who had died without a will, as before stated, in 1504. Arriving in Florence, he found his brothers prepared to contest his claims.

He brought with him the following letter from De Chaumont to the Signory, that would seem to be not only meant to urge his claims of inheritance, but also to expedite his return to Milan, in case their lordships should be inclined to detain him in Florence.[1]

"Most Excellent Sirs,—

"THERE has come to you maestro Leonardo Vinci, a painter of the most Christian King, to whom with much difficulty we have granted leave; he being engaged to paint a picture for His Majesty, is anxious to settle certain differences which have taken place between him and some of his brothers respecting an inheritance left him by an uncle. For which reason, in order that the said Leonardo may return quickly to finish the work he has begun, we beg your Excell^ies^ to be good enough to despatch him quickly, and let his cause be despatched, affording him all just help and favour, and your Excell^ies^ will do a pleasure to the most Christian King and to us who recommend ourselves to you.

"Given at Milan, 15th August, 1507.

"Your servant,
"D'AMBOYZE.

"Lieutenant General in the dominions
on this side the Alps, great Master
and Marshal of France."

Besides this letter from De Chaumont, Leonardo sought another advocate for his cause in the reverend Archbishop of Milan, Hippolyte d'Este, whose friendship he had acquired in

[1] Gaye, "Carteggio." Gaye places the date of this letter as August 18, 1509, but Uzielli has found it to be August 15.

former times in Milan. On the 18th of September, 1509, he writes as follows :—

"To the most illustrious and reverend Lord Hippolyte, Cardinal d'Este, my very venerable master at Ferrara.

"Most illustrious and reverend Lord,

"A FEW days ago I came from Milan, and found that one of my brothers refuses to execute the will made by my father at the time of his death three years ago. Not wishing, although right is on my side, to fail in my duty to myself in a thing to which I attach importance, I would not omit to ask your Reverend Lordship for a letter of recommendation and protection to the Lord Raphaello Theronymo (Girolami), who is at present one of our highest and most powerful lords, before whom my case will be tried, and who has been, besides, particularly charged by his Excellency the Gonfalonier, that the said trial should be decided and ended before the feast of All Saints. This is why, my Lord, I beg of you to write a letter to the said Lord Raphael in the adroit and affectionate style that you know how to use, recommending to him Leonardo Vincio, the most devoted servant of your Lordship, as I still call myself and shall always remain, begging and charging him not only to do me justice, but to give me a speedy decision. And I doubt not from the many things that I hear, that through the Lord Raphael, who has much affection for your Lordship, my affair will succeed according to my wish, the which I shall attribute to the letter of your Reverend Lordship, to whom I again commend myself. Et bene valeat.

"Florentie, xviii. Sept. 1507.

"Your Reverend Lordship's humble servant,

LEONARDUS VINCIUS PICTOR".[1]

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[1] This letter was first published by Campori, "Nouveaux Documents sur Léonard de Vinci," who found it among the archives of Modena.

It is not known how or when this lawsuit terminated, or whether my Lord Raphael was favourable to Leonardo or not, but at all events the painter was back in Milan before the end of the year. The Signory, not wishing, perhaps, to offend his most Christian Majesty, with whom they were particularly anxious to keep on good terms, and who had himself written to them to ask them to expedite the artist's return to Milan,[1] made no effort to detain him, and there seems to have been no more talk of his finishing the wall-painting for which he had made the cartoon. Michael Angelo also had been called to Rome by the imperious Julius II., so Florence had to content herself without her two greatest masters.

In the July of 1507 Leonardo apparently was staying at a country house belonging to the Melzi family in the Canonica of Vaprio, on the borders of the Adda, for from thence he dated a letter of which a fragment has been preserved,[2] beginning, " Ca-

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[1] The letter of Louis XII. to the Signory of Florence has been recently found among the Archives of Florence. It was first published by Delécluse, "Saggio intorno a Leonardo da Vinci," Siena, 1844. It runs as follows :—

" Lovs, par la grace de Dieu roi de France, duc de Milan, Seigneur de Gennes. Très chiers et grans amis. Nous avons esté advertiz que nostre chier et bien amé Leonard da Vincy, nostre painctre et ingenieur ordinaire, a quelque différend et procés pendant à Fleurance à l'encontre de ses frères pour raison de quelques héritages ; et pour ce qu'il ne pourrait bonnement varquer à la poursuicte du dit procés pour l'octupaction continuelle qu'il a près et alentour de nostre personne ; aussi que nous désirons singulièrement que fin soit mise au dit procés en la meilleur et plus brefve expédiction de justice que faire se pourra ; à cette cause, nous en avons bien voulu escripre. Et vous prions que icelui procés et différend vous veillez faire vuyder en la meilleur et plus brefve expédiction de justice que faire se pourra ; et vous nous ferez plaisir très agréable en ce faisant. Tres chers et grans amys, Notre Seigneur vous ait en sa garde. Escript a Milan le xxvj^me^ jour de Juillet.

" Lovs,
" Robertet.

" (A tergo) A noz tres chers et grans amys alliez et confédérez les Gonfaloniner perpetuel et Seigneurie de Fleurance."

[2] In the " Codex Atlantico," fol. 130.

nonica di Vuvro (Vaprio) a di 5 di Luglio 1507.—Cara mia diletta Madre et mia sorella et mia cognata avvisovi chome sono sano per la grazia di Dio." De Pagave, in his manuscript notes so often quoted by Amoretti, says that he had seen a wall-painting of a head by Leonardo in this house near a window. This has long since disappeared, but on the façade of the Melzi Villa at Vaprio there still remains the blackened and ruined fresco of a gigantic Madonna and Child, that it is supposed was painted by Leonardo during one of his visits to Vaprio. The fresco was in tolerably good condition until 1796, when some soldiers, bivouacing in the neighbourhood, lighted a fire close under the wall upon which it was painted and greatly injured it. Before this injury Père della Valle spoke of its majestic beauty in enthusiastic terms,[1] and even to the present day it is said to retain something of the Leonardo charm.[2]

Louis XII. after he had subdued the revolt of the Genoese, returned to Milan in the summer of 1507, at which time he probably wrote the letter before quoted to the Signory of Florence. The letter is only dated with the month and not the year in which it was written; but if 1507 be correct, as many circumstances show it to be, Leonardo must have again gone to Florence immediately after the letter written from the Canonica di Vaprio, and have returned before the 15th of October of the same year, although his lawsuit apparently was not settled. His circumstances could not have been very brilliant at this time, for the record that gives us this date, October 15, as that of his return to Milan, likewise enlightens us as to the state of his income. It is a little memorandum that has been found among his MSS. stating that at this time he had only thirty crowns,

[1] "Il più sublime e il più morbido che veder si possa; che bell' impasto di carnagione! che morbidezza," &c. quoted by Amoretti, p. 102.

[2] Passavant, however, is of opinion that the fresco was painted by Francesco Melzi, the master of the house, from a design by Leonardo.

but that, with his accustomed generosity, he lent or gave Salaï thirteen to make up the marriage portion of his sister, keeping only seventeen for himself.[1]

The four years that elapsed between 1507 and 1511 were, says Rio, "l'apogée de la gloire et du bonheur" of Leonardo. The French king bestowed upon him the title of Peintre du Roi; the governor and marshal, De Chaumont, was his generous friend; his pupils, to whom Melzi tells us he was a father and a friend, again gathered round him, and he was honoured and revered by all who knew him.

His principal work during this time seems to have been as an engineer—at least it is not known what paintings he accomplished for the most Christian King, whether the "certain small pictures of Our Lady" were ever painted or the portrait of himself that Louis thought it probable he should require.

Unfortunately, in Vasari's narrative there is a great gap at this period. The old chronicler jumps from 1504 to 1515 without the least allusion to this second sojourn in Milan, so that we have no consecutive history of Leonardo's life at this time. The researches of modern historians have, however, pretty well made up for Vasari's deficiency, for more authentic documents and letters of this period have been discovered than of any other.

The works of the canal of Martesana, there is little doubt, occupied the chief part of his time. This, as before said, had been begun under Lodovico, and was continued by De Chaumont with great energy. It presented numerous difficulties. In one of Leonardo's manuscripts, dated 1508, there is a whole chapter entitled "*Del Canale della Martegana*," in which he suggests a means for repairing the damage that would be done to Lodigiano if the waters necessary for the irrigation of that district were drawn off

[1] "Addi 15 Octobre, 1507. Ebbi sc. 30. 13 ne prestai a Salaï per compiere la dota della sorella e 17 ne restò a me." (Amoretti, p. 103.)

without compensation from other sources. It appears probable also that he was engaged upon other hydraulic works.

For these and other services the king in 1508 presented him with the right of ownership of twelve ounces of water to be taken from the Grand Canal near San Cristoforo. This curious present was, it seems, a valuable one. "As far as it can be at present understood," says Brown,[1] "it appears that he was entitled to as much water as could be drawn off by a tunnel that measured one foot in diameter, which is equal to twelve ounces, and that he had a right of applying this to whatever purpose he pleased. To an engineer of his talents this was of the greatest value, as he might have either applied it to hydraulic purposes, or sold it to the proprietors of the neighbouring land to enrich the cultivation of their soil by its irrigation."

It was a long time, however, before Leonardo gained possession of his twelve ounces of water, as we find by certain letters written by him to De Chaumont, Melzi, and the President of the Water Works at Milan, at a later date.[2] Indeed, he does not seem ever to have made any use of the king's gift; although as he disposed of it in his will, he evidently regarded it as his property, notwithstanding the changes of government that afterwards occurred.

Amoretti supposes[3] that Leonardo took part in designing the triumphal arches, fêtes, and celebrations that took place in June, 1509, when Louis XII. made a triumphal entry into Milan after the battle of Aguadello, gained by the French over the Venetians. Whether he did or not, it is certain that he had now completely transferred his loyalty from Lodovico Sforza to the French king,

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[1] "Life of Leonardo da Vinci," 1835. [2] See page 67.

[3] From a phrase used by Arluno, who describes the pomp and splendour of the king's entry, and speaks of pictures by great masters executed for the occasion. He does not mention Leonardo's name, but the phrase "pitture mollissime" is supposed to refer to his works, as Arluno uses it concerning Leonardo elsewhere.

whom, as we shall see, in his letter to Chaumont, he speaks of as *our* most Christian king—*cristianissimo nostro re*—as, indeed, the Milanese themselves seem at this time to have done. In the March of 1509, however, Leonardo was certainly in Florence, as we find from one of the manuscripts in the British Museum, at the beginning of which is written, "Begun in Florence in the house of Piero di Barto Martello on the 22nd of March, 1508.[1] This is the old reckoning, *ab incarnatione*. The actual date is 1509.

On the third of March, 1510, as we again find from one of his own manuscripts,[2] he was back in Milan, designing a wharf on the great canal S. Cristoforo.

He seems, indeed, at this time to have been constantly journeying between Florence and Milan, whether on account of the litigation with his brothers, or because he was occupied with works in both cities, is not apparent. Certainly no work of a public kind detained him in Florence, for the painting of the Palazzo Vecchio was quite given up. The only painted work that can be referred with any certainty to this period is the portrait mentioned by Lomazzo, of the Marshal Gian Jacopo Trivulzio, a Milanese by birth, but an enemy of the Sforza family. He was made governor of part of Lombardy by Louis XII., and commanded under Francis I. at the battle of Marignano, on which occasion he is reported to have said that "he had been in eighteen pitched battles, but had found them all child's play compared with this battle of giants."

The portrait that Leonardo painted of this hero is by some critics supposed to be the one in the Dresden Gallery, that is also designated Lodovico Sforza, but it seems very uncertain whether it represents either of these generals, or indeed, whether it is by Leonardo at all.[3]

[1] Arundel MSS. p. 79.

[2] "Amoretti," p. 104.

[3] A copy of a portrait, also said to be that of Trivulzio, by a painter of Leonardo's school, has been engraved by Morghen.

In 1511 it is probable that Leonardo was again, during some part of the year, in Florence, at least Amoretti and Uzielli suppose that to be the most likely date for the following letters written by him to his friends De Chaumont and Melzi, and to the President of the office of Water Works at Milan:

Leonardo da Vinci to De Chaumont (1511 ?).

"I SUSPECT that my small returns for the great benefits which I have received from your Excell^{y} have caused you to take some offence against me, and that it is for this reason that to so many letters which I have written to V. S. I have never had any answer. I now send with this Salaï to inform V. S. that I am almost at the end of the lawsuit with my brothers, and that I expect to be with you by next Easter, and to bring with me two Madonnas (Nosstre Donne) of different sizes, which have been done for his most Christian Majesty, or for whomsoever V. S. chooses. I should be very glad to know at my return from this place, where I have been obliged to stay by necessity, and because I did not wish to give more trouble to V. S., whether, considering that I have also been at work for his Majesty, my salary is to go on or not.

"I am writing to the President about the water which the king gave me, but of which I have never been put in possession, because at that time there was scarcity in the canal through the great drought, and because the sluices were not regulated; but I was clearly promised that when they were regulated I should be put in possession: wherefore I beg V. S. to be so good, now that the sluices are in order, to remind the President of my business, *i. e.* to give me possession of this water, because at my arrival I hope to construct thereon instruments and things which will give great pleasure to our king.

"I have nothing more to say, but remain always,

"At your commands."

Leonardo da Vinci to the president of the office regulating the waters at Milan (1511 ?).

"Gracious President,—

"As I have often called to mind the promises frequently made to me by your Excellʸ, I take the liberty to write and to remind you of the promise you made me at our last meeting, respecting the 12 oz. of water given me by the most Christian king. V. S. is aware that I did not enter into possession of it, because[1] at that time there was scarcity in the canal through the great drought, and because the sluices were not regulated, but I was clearly promised that when they were regulated that I should be put in possession; and understanding that the canal was in good order, I wrote several times to V. S. and to Master Girolamo da Casano, who has by him the deed of donation, and I also wrote to the governor, and have had no answer. I now send to you my pupil Salaï, bearer of this letter, to whom V. S. may tell verbally all that has been done in the matter on which I trouble your Excellʸ.

"I expect by next Easter to be near the end of my dispute, and will bring with me two pictures of Madonnas which I have commenced, and which during the time that has passed, I have brought into a very good condition.

"I have nothing farther to say."

This last letter appears to have been only the rough draft of the one really sent by Leonardo to the president, for there is extant another copy of it couched in almost the same terms.

Leonardo da Vinci to Francesco Melzi (1511 ?).

"Good day Messer Francessco,—

"God knows why after so many letters as I have written to you, you have never sent me an answer. Only wait till I

[1] See letter to Chaumont.

come, and by Heaven I will make you write so much that perhaps you will be sorry. My dear Messer Francessco, I am sending Salai to ask his Grace the president that he will at last help in that regulation of the water which was ordered on my part for the sluices of the canal, because the President promised me that as soon as they were regulated my business should be settled. Now for some time I have understood that the canal is in good order, as also the sluices, and I at once wrote to the president and to you, and afterwards wrote again, and never received an answer. Therefore you will kindly let me know how things stand, and if the matter be not completed, take the trouble for love of me to solicit the President a little, as also Messer Giralamo da Casano, to whom you will recommend me, and offer my respects."

We do not know what replies Leonardo received to these letters, or whether the twelve ounces of water about which he writes were then put into his possession. If so, he does not seem to have made use of them either for "instruments and things (probably hydraulic inventions), to give pleasure to our king," or for anything else.

We have, indeed, no certain knowledge of any of Leonardo's works during the seven years of his second residence in Milan, under the government of Louis XII. Vasari, as before said, passes over these years without notice. But in the absence of historic information concerning the dates of so many of his pictures, it is convenient to refer to this period of his life several works to which no date is assigned by Vasari, and which were evidently executed or designed by Leonardo in the maturity of his powers.

Of these may be cited the celebrated Madonna and Child with the little St. John, and an angel known as "La Vierge aux Rochers," of which France and England have each a repetition; for thus it must be stated, critics not having yet decided which

is the original, the Louvre example or the one in the possession of the Duke of Suffolk,[1] or indeed whether either can claim to be really the work of Leonardo himself.[2] That he designed this composition and gave the subject much thought is proved by the number of preliminary studies that have been found, that evidently have reference to it.[3]

The St. John the Baptist of the Louvre is also one of Leonardo's finest works, and the splendid modelling of the head and its unsurpassed technical excellence make it probable that it is one of the few paintings that may be supposed to have been really executed by himself. The orthodox Rio is not satisfied with the "poetic perfection" of this naturalistic figure of St. John. "On y cherche vainement," he remarks, "cet idéal ascétique réalisé plus ou moins heureusement par la peinture chrétienne, mais auquel Léonard, avec tout son génie, ne put jamais atteindre." This is true. The "ideal ascetique" was too narrow for the wide philosophy of Leonardo da Vinci; but neither had the sensuous ideal of the Venetians any charms for him. The loveliness of his women is that of mind and not of flesh.

The subject of Herodias with the head of St. John the Baptist was a favourite one with Leonardo's school, and doubtless the original conception emanated from the master; but whether the small representation of the subject in the Uffizi is his work or that of Luini, is difficult to decide. Borghini[4] unhesitatingly pronounces it to be by him, but other critics class it only with the works of his school. We find many repetitions of this subject with slight variations.[5]

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[1] Exhibited in the Royal Academy, old masters, 1870. [2] See Catalogue.

[3] A drawing of the head of the Virgin and of the Child in the collection of the Duke of Devonshire at Chatsworth far surpasses in loveliness either of the two finished compositions. There is also a beautiful sketch in grisaille of the head of the Virgin in the collection of Mr. Holford.

[4] "Riposo," vol. ii. [5] See Catalogue.

LA VIERGE AUX ROCHERS.

In the Louvre.

The two half-length female figures known by the title of "Vanity and Modesty" is a composition that has also been repeated several times, the best rendering being that in the Sciarra Gallery at Rome. "La Colombina," or Flora, is another woman's portrait, to which the title of "Vanity" has sometimes been given. It is not, in fact, as would seem at first sight, a simple portrait of a beautiful woman, any more than the Mona Lisa or other female figures by Leonardo, but is expressive of some complex idea in the mind of the painter that we cannot quite understand. Each interprets it according to his own notions.

La Monaca, of the Pitti Palace, puzzles us in the same way. What does that alluring beauty in the sad garments of a nun mean?

Leonardo, as will have been seen, did not, like so many masters of his time, rush unhesitatingly into the domain of pagan mythology. Though sympathizing fully with the Renaissance, and being, as is stated in his epitaph, the admiring and grateful pupil of the ancients, he never adopted the pagan style or allowed himself the pagan license from which even Raphael did not quite refrain. One mythological subject, however, is attributed to him, that of Leda with her twins, represented in a grand painting at the Hague, which, however, has been converted by some prudish possessor into a "Charity," by the simple process of clothing the naked figures.

Numerous Madonnas and Holy Families of Leonardo's gracious type of beauty are found in different galleries and collections, and many of them were doubtless inspired by him or even painted from his design; but knowing the surpassing excellence of his two or three certainly authentic works, we must always hesitate in ascribing to him any picture, however charming, that falls short of the wonderful perfectness of these.

The Holy Family known as "La Vierge au bas-relief," of which

there are so many examples, is one of the most beautiful and best known of his Madonnas.[1]

Christ disputing with the Doctors, in our National Gallery, was for a long time thought to be a genuine work of Leonardo, but it is now universally believed by critics to be by Bernardino Luini. Luini, indeed, was so thoroughly imbued with Leonardo's sentiment, and was in himself such an admirable painter, that his works have long been attributed to his master. Lomazzo tells us that he was a poet as well as a painter; and although we know nothing of his verses, we feel that he must have been. It was not only Leonardo's mantle that fell upon his shoulders, but the inspiration of the master descended in some degree to the disciple. It is not supposed that he was one of the students of the Milanese Academy, or indeed that he was an immediate pupil of Leonardo's, like Melzi, Salaï and others, yet more than any other he seems to have been influenced by his teaching.

Cesare da Sesto was another of the artists formed by Leonardo, and is called by Lomazzo his "happiest imitator." He learnt no doubt directly from Leonardo in Milan, and quitted that city for Rome about the same time as his master, though he did not, like several other of his pupils, travel in his company.

For in his works at Milan, whatever they may have been, and in his peaceful teaching of his pupils, Leonardo was now once more disturbed. The period that Rio calls "l'apogée de sa gloire et de son bonheur," was not of long duration. The death of the wise De Chaumont, in 1511, and the fearful sack of Brescia by the French army which took place in February, 1512, put an end to the popularity of the French in Lombardy. Even those who had welcomed the French king as an exchange from the tyranny of the Sforzas began to feel the evils and oppression

[1] See p. 76, and Catalogue.

CHRIST DISPUTING WITH THE DOCTORS.

In the National Gallery, London.

[*Query by Luini.*]

of a foreign government, and to desire once more a native ruler. The battle of Ravenna, in which the renowned Gaston de Foix was killed, although gained by the French, broke their power in Italy, and very soon the French general La Palisse was obliged to evacuate Milan, of which the Swiss at once took possession in the name of Maximilian Sforza, the son of Lodovico. Maximilian was received by the people of Milan with the same rejoicings that they had recently shown at the entry of Louis XII.; indeed, it is said that the triumphal arches under which the French king had passed were set up again for his successor. The French, after a slight return of fortune, by means of which they regained Milan for a time, were finally obliged to evacuate Lombardy, "where," says an historian of the time,[1] "all was confusion, vengeance, and misery"—*confusione, vendetta, et indigenza*, though a peace was at last signed between the belligerent powers.[2]

Leonardo, whose want of patriotism and indifference to politics has been made a matter of reproach with several writers, although he had accepted the position and pension of painter to the French king, must have now returned to his allegiance to the house of Sforza, for we find that he painted the young duke Maximilian twice before he finally left Milan.[3] But a country that was in this fearfully unsettled state, and where "confusion, vengeance, and misery" reigned supreme, was no place for an artist who loved tranquillity above all things, and who had been suddenly robbed by the overthrow of the French not only of that, but also of all hope of recompense and glory.

Accordingly he made up his mind to depart, and on the 24th of

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[1] Quoted by Charles Blanc, "Histoire des Peintres."

[2] It was signed in London on the 7th of August, 1514.

[3] Amoretti, pp. 52 and 112. One of these portraits is supposed to be in the Ambrosian at Milan, the other is said to be in the possession of the Melzi family.

September, 1514,[1] he set out from Milan, as he tells us in one of his manuscripts, with Giovanni, Francesco Melzi, Salaï, Lorenzo, and the Fanfoia. *Partii da Milano per Roma addì 24 di Settembre con Giovanni, Francesco Melzi, Salaï, Lorenzo e il Fanfoia.*

So runs the brief record on one of the manuscripts at Paris. Nothing to tell us of his regrets, his shattered plans, his future intentions. We learn, however, from this note that his favourite pupils, "his children," accompanied their master and father on his pilgrimage, and no doubt softened its sorrow. We know not who Lorenzo[2] and Fanfoia were, but Giovanni was probably Giovanni Beltraffio, one of his best scholars, and Melzi and Salaï, were, as we have seen, his dearest pupils and friends.

With this small following of faithful pupils, who probably felt like himself that stormy Milan was no place for the peaceful arts, Leonardo directed his steps towards Rome, where Michael Angelo and Raphael had already preceded him. He did not, however, go straight to the Holy City, but appears to have delayed awhile in Florence, where the Medici were once more in the ascendant, Giovanni de' Medici having succeeded to the popedom under the name of Leo X., and his brother Giuliano being ruler in Florence. It was in Giuliano's train that Leonardo finally arrived in Rome, where he was cordially received by Leo X., who bade him "work for the glory of God, Italy, Leo X., and Leonardo da Vinci;" but who, nevertheless, neglected to give him any important commission. Indeed, it is

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[1] The date of the year is not given by Leonardo, but in the same codex as the above record, underneath a small drawing of a wild and desolate country, there is written, "Sulla riva del Po vicino a Sant' Angelo nel 1514, addì 27 Settembre." This drawing is supposed to have been made on his journey from Milan.

[2] Lorenzo was probably a Florentine and not a Milanese pupil, for in 1505, when Leonardo was living in Florence, he wrote on one of his manuscripts :—" 1505, Martedi sera a dì 14 d'Aprile. Venne Lorenzo a stare con mecho; disse essere d'età d'anni 17."

easy to understand that a painter who had been in the service of the King of France, and who was devoted to the French interest, would not find much favour in Rome, where a strong anti-Gallican feeling prevailed. Added to this, Raphael and Michael Angelo already held the first places as artists in the capital, and it must have been difficult for Leonardo, who had been first in Milan, to submit to being considered second or even third in fame at Rome.

Michael Angelo was at Florence at the time of Leonardo's arrival, but according to Vasari, who takes up Leonardo's life again at this period, "there was great disdain between Michelagnolo Buonarroti and Leonardo," and therefore when the former heard that the latter was in Rome the competition between them caused Michael Angelo to leave Florence, the Duke Giuliano framing as an excuse for him that he was summoned by the Pope concerning the façade of San Lorenzo. "When Leonardo knew of this," adds Vasari, "he departed and went to France."

Herman Grimm, Michael Angelo's biographer, endeavours to disprove this asserted rivalry by showing that Michael Angelo was not in Rome during Leonardo's brief stay there;[1] but it probably did not need the presence of his rival to revive the jealousy that had formerly existed in Florence on account of the cartoons. We do not know whether Leonardo entered into competition for the projected façade of San Lorenzo at Florence, designs for which had been required by Leo X. from all the great artists of the time. Raphael, the Sansovini, and others sent in drawings, but Michael Angelo's design was chosen, and he, much against his will, for he wished to be allowed to finish the Mausoleum of Julius II., was compelled to undertake it. The façade was not actually begun by Michael Angelo until January, 1517, after Leonardo had left Italy, but the competition

[1] See "Life of Michael Angelo," vol. i. p. 391.

took place while he was in Rome, and it is not improbable that he entered into it and was annoyed at Michael Angelo's victory.

The only patron that Leonardo found in Rome besides the Pope, who, according to Vasari, prized him more on account of his alchemical knowledge than for his artistic powers, was a certain Messer Baldassare Turini of Pescia, who was datary (almoner) to Leo X. For him Leonardo executed a picture of the Virgin and Child, "with infinite care and art," and also a painting of a little child marvellously graceful and beautiful, *bello e grazioso a maraviglia.* These paintings in Vasari's time were still at Pescia, in the possession of Messer Giulio Turini; but like so many of Leonardo's works, they are now lost, or at least cannot be identified among the numerous Madonnas attributed to him.

It has been considered that the "Holy Family of the Hermitage" at St. Petersburg, a picture similar in composition to the well-known Vierge au bas-relief, was painted by Leonardo at this time for Leo X. The group is formed of the Virgin and the Child, who holds forth his hand to receive a tazza offered to him by the little St. John. Behind stand St. Joseph and a beautiful figure of St. Catherine, which is said to be a portrait of Filiberta of Savoy, who at the time this picture is supposed to have been painted was the betrothed or newly-married wife of Giuliano de' Medici.

De Pagave and several other modern critics, among whom may be mentioned Beyle and Passavant, have no doubt of the authenticity of this picture. Beyle especially speaks of it in enthusiastic terms, and Passavant considers it "worthy of Leonardo;" and what more can be said? Other critics, however, find in it only one of the many repetitions of the Vierge au bas-relief, and by no means the best.[1]

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[1] Viardot calls it "Une page défectueuse, où les deux femmes, Marie et

LA VIERGE AU BAS-RELIEF.

In the possession of Lord Monson.

De Pagave thinks that Raphael's influence is perceptible in this work. "Although the Vincian style is perfectly discernible," he says, "it is evident that Leonardo imitated Raffaelle in this composition."[1] But it is much more probable that Pagave was thinking at the time he wrote of those pictures in which Raphael undoubtedly imitated Leonardo, and thus found the resemblance of style.

The St. Petersburg Holy Family is signed with the monogram of Leonardo, "L. D. V." a circumstance that is in itself suspicious, as Leonardo rarely or never signed his works.

This work, however, even if it were painted for Leo X., which seems extremely doubtful, could not have been the one commissioned by that pope, for which, as Vasari records, he distilled oils and prepared herbs for the varnish before beginning the picture itself, a proceeding that called forth the remark from the Pope, "Alas! the while, this man will assuredly do nothing at all, since he is thinking of the end before he has made a beginning of his work."[2]

Angered by this remark, and by the general want of appreciation that he had met with in Rome, Leonardo resolved to leave the field to Michael Angelo and Raphael, and the youthful artists who surrounded these two supreme masters, and to withdraw altogether from a contest to which, perhaps, he now felt himself unequal.

An opportunity soon occurred that allowed him to do so, not only without loss of dignity, but with prospects that must have made up in some measure for the slighting treatment he had received in Rome. Louis XII., whom, as we have seen, he styled "nostro

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Catherine, sont calquées l'une sur l'autre, où tout est laid, disgracieux, grimaçant." Who shall decide?

[1] Quoted in Amoretti, "Memorie Storiche."

[2] "Oimè! costui non è per far nulla, da che comincia a pensare alla fine innanzi al principio dell' opera!"

re," died just at this juncture, and the brilliant young Francis I. succeeded him on the 1st of January, 1515, and soon after asserted his claims to Italian dominion. Once more Italy was invaded by a French army, and the desperate battle of Marignano again unseated the Sforzas, and left Lombardy to the rule of the French. So complete, indeed, was this victory, that even the Pope thought it desirable to make terms, and signed a treaty at Viterbo on the 13th of October, 1515, by which he restored Parma and Placentia to the French. Meanwhile, Leonardo, on hearing of the successes of Francis I., had at once joined that monarch, who received him with every mark of favour, as being not only the greatest master in Italy, but likewise as one already attached to the French interest. He reinstated him in all the honours that he had enjoyed under his predecessor, and bestowed on him not only the title of Painter to the King, but also a pension of 700 crowns of gold, that he does not seem to have received from Louis XII.[1]

It must have been during Leonardo's short residence at Milan at this time that he wrote the following letter to his castaldo, or steward, at Fiesole, where we may infer he had property.

The letter is important, as showing that he must have understood the use of mineral manure, for he directs that lime should be added to the soil to dry the roots of the vines; also it is evident that the respiration of plants, a discovery which is not supposed to have been made until much later, must have been known to him. "The stem and the leaves," he says, "draw in *from the air* the matters necessary for the perfection of the

[1] This pension is spoken of by Cellini, who says in his autobiography that the Cardinal da Ferrara came to him and told him that the most Christian king had of his own accord assigned to him the same salary that his Majesty had given to Leonardo da Vinci, the painter, namely, 700 crowns a year. "Il nostro Re Cristianissimo da per se stesso v'ha fatto la medesima provvisione che Sua Maestà dava a Leonardo da Vinci Pittore, quali sono 700 scudi l'anno."

grape." *Lo stelto e le folie dall aria altranno le substantie conveniente alla perfetione del grapolo.*

Leonardo da Vinci to Zanobi Boni, 9th December, 1515.

"From Milan, to Zanobi Boni, my castaldo.

"THE four last bottles were not up to my expectation, for which I am very sorry; the vines of Fiesole being much improved in quality, ought to furnish first-rate wine for our Italy as well as for Ser Ottaviano. You know, however, that I told you it would be necessary to manure the cord when placed in the stony ground with lime mortar from destroyed houses or walls, and this dries the root; and the stem and the leaves draw in from the air the matters necessary to the perfection of the grape. Besides, we have now a very bad habit of making wine in uncovered vessels, and so the essence escapes into the air during fermentation, and nothing remains but a tasteless liquor coloured by the dregs and the pulp; moreover, they do not shift it as they ought from vessel to vessel, in consequence of which the wine becomes turbid and difficult of digestion.

"However, if you and others will profit by these reasonings, we shall drink good wine.

"May the Blessed Virgin save you. "LEONARDO."

It is supposed that the lion spoken of by Lomazzo was invented by Leonardo at this time, to add to the splendour of the shows and entertainments held at Pavia in honour of the conquering young king. This wonderful lion was so contrived, that by means of hidden machinery it walked by itself straight up to the king's throne, where it disgorged vast quantities of fleur-de-lis, in compliment to his Majesty.

We might, perhaps, scarcely credit that the great Leonardo occupied himself with such king's playthings as this, although they were the fashion of his age, and many good artists besides

himself did not disdain to design them, but that we are told by Vasari, and all writers who have written upon the subject, that Leonardo delighted to amuse himself with curious and apparently useless inventions. "One day," says Vasari, "the vine-dresser of the Belvedere found a very curious lizard, and for this creature Leonardo constructed wings, made from the skins of other lizards flayed for the purpose; into these wings he put quicksilver, so that when the animal walked, the wings moved also with a tremulous motion. He then made eyes, horns, and a beard for the creature, which he tamed and kept in a case; he would then show it to the friend who came to visit him, and all who saw it ran away terrified. He more than once likewise caused the intestines of a sheep to be scraped and cleansed until they were brought into such a state of tenuity that they could be held in the hollow of the hand; having then placed in a neighbouring chamber a pair of blacksmith's bellows, to which he had made fast one end of the intestines, he would blow into them until he caused them to fill the whole room, which was a large one, insomuch that whoever might be therein was obliged to take refuge in a corner; he thus showed them transparent and full of wind, remarking that whereas they had previously been contained in a small compass, they were now filling all space, and this, he would say, was a fitting emblem of genius. He made an infinity of such follies as this, and likewise occupied himself with mirrors and optical instruments and with the most singular experiments in seeking oils for painting and varnishes to preserve the work when executed."

What Vasari designates as follies or whims (*pazzie*), may possibly have been the tentative experiments of an inductive philosopher seeking for knowledge on the expansibility of gases or some such subject of inquiry, but the ordering of entertainments with such pretty little diversions (*entremetz*) as walking lions and rolling planets can hardly be construed into philosophical studies.

But, as before said, Leonardo's character was made up of contradictions. No man, it would seem, ever changed so rapidly "from grave to gay, from lively to severe." A philosopher, an artist, a courtier; he played all three parts with equal facility, and changed from one to another with incredible rapidity.

One of his strange contradictions was a strong love of caricature. He, the priest of ideal beauty, seems also to have been a worshipper of ideal ugliness. Numerous are the caricature heads that he has left us in which some peculiar deformity of feature is exaggerated with comical effect.[1] Indeed, such was his appreciation of the grotesque in the human countenance, that if he saw anyone of remarkable ugliness or peculiarity of visage, he could not rest satisfied until by some means or other he had recorded the impression produced upon him. With this strange end, Lomazzo tells us, Leonardo would frequently invite peasants and rustic clowns to dine with him, and keeping them in roars of laughter with all sorts of buffoonery, would carefully meanwhile note their gestures in their boisterous mirth, and afterwards, retiring into his room, would transfer their contorted faces to paper.

In like manner it is said that he would sometimes attend the execution of criminals, in order that he might watch their dying agonies, and study the muscular contractions of their limbs. And this in spite of his being so tender-hearted, that it is related by Vasari that he could not pass by the places where caged birds were sold without buying some for the purpose of restoring them to liberty.

It was as one of the court of Francis I. that Leonardo once more met Leo X. at Bologna, the place fixed upon for an inter-

[1] Many of these were engraved by Wenceslaus Hollar, and published in a small quarto in 1786. See also "Recueil de Testes de Caractère et de Charge dessinées par Léonard de Vinci et gravées par M. le C. de C." Paris, 1730; and Chamberlaine, "Original Designs of the most celebrated Masters," 1812.

view between the new king and the new Pope. Here, if he cared to use it, was a great opportunity for triumphing over those who had neglected and underrated him at Rome, for here the grand old painter was almost as great a man as the grand young monarch.

Francis I. when in Milan, tried, as before related, to carry away with him the "Last Supper" to France, but failing in this, he determined to carry away the painter of it, that he might, if possible, produce still more glorious works in his service. Leonardo acceded to the king's desire. There was nothing now left him in Italy. Milan, under the government of Lautrec, was no place for an artist-philosopher of peaceful proclivities. His dreams would be constantly liable to be broken in upon by revolutions. In his native Florence he had already experienced the truth of the proverb, that a prophet is without honour in his own country; and at Rome also, where he ought to have formed a splendid triumvirate with Michael Angelo and Raphael, he had found himself coldly treated, and his genius to some extent disparaged, though probably only because it was not sufficiently known. All his great works had been done far away in Milan, and critics in Rome had only the fame he had acquired in that city to set against the splendid works of his rivals that they had constantly before their eyes. Had he been content to have remained at Rome, and to have put forth his powers in some great work like the "Last Judgment" of Michael Angelo, or the "School of Athens" of Raphael, it is probable that he would have overcome all the obstacles that opposed him, and would have taken his rightful place among the artists of that wonderful blooming time of art that reached its perfection in the Rome of Leo X. But it is not to be wondered at that, seeing his place, as he doubtless deemed it, already occupied in Rome, he should have endeavoured to heal the wounds he had received in his own country by accepting the munificent offers of the

French king, who deemed his conquests in Italy imperfect unless he conquered also Italy's painter.

Accordingly, when in the January of 1516 Francis I. returned to France after his first short but brilliant campaign in Italy, he took with him Leonardo da Vinci[1] as one of the chief fruits of his success.

Leonardo, it is pleasant to think, did not go forth alone to the French Canaan that was set before him in his old age. His beloved pupil and friend, Francesco Melzi, Salaï, and his attached servant Villanis, accompanied him to France as they had done to Rome.

On the arrival of these artist emigrants, Francis I. installed them in the château of Cloux, or Cloux de Murailles, as it is called in the documents of that time,[2] a small château situated just outside the walls of the king's castle at Amboise. Besides this residence and his pension, Leonardo was allowed horses for his use to go to Blois, Paris, St. Germain, and Fontainebleau, wherever the king might be holding his court, and the right of directing all artistic undertakings in France. The château of Cloux, according to a description given of it by Pierre Morin, Treasurer of France and Mayor of Tours, who sold it to Charles VIII. in 1490, must have been a most delectable retreat for a weary artist, with its woods, meadows, willow plantations, gardens, and fishpond.[3]

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[1] Or he followed shortly after the king's departure.

[2] It is now Clos-Lucé, the small fief of Lucé having been united to the Clos, or old Chateau.

[3] The old document concerning the sale runs as follows, but perhaps it was drawn up somewhat in the style of a modern auctioneer's advertisement of the property he desires to sell :—

" C'est assavoir l'ostel du Cloux près le chastel d'Amboise, duquel a plusieurs corps d'ostel, contenant, tant en edifices que jardins, vivier, bois, deux arpents et demy de tenue ou environ.

" Ensemble le lieu de Maisières ainsi qu'il se poursuit et comporte en maisons,

Here, in the great salon that seems to have served him as *atelier*, he might surely embody some of the many ideals that he had floating in vague beauty in his mind; here he might perfect his theories in natural science, might watch the flight of birds as he had before done at Fiesole, and endeavour to learn their secret of flying; might listen to the sound of falling water, as at Rimini, and measure its harmonies; might meditate on the mysteries of nature, nor quail before

"The mighty range
Of secret truths that yearn for birth."

But it is not always the most fortunate conditions that are most favourable to genius. The greatest works are often those that have been produced under the greatest outward restraint and difficulty. Leonardo, at ease in his château in France, with his dearest friends near him, enjoying the appreciative patronage of a king, courted and admired by all, and looked up to by the French painters as a kind of god descended among them; Leonardo the painter, natural philosopher and practical engineer, did nothing. He could not even be prevailed on, Vasari tells us, to paint the cartoon of St. Anna, that he had brought with him from Italy for the purpose but "kept the king a long time waiting with nothing better than words." From the time he entered France, indeed, he seems to have fallen into a kind of languor that increased the natural dilatoriness of his nature. Although now an old man, he was younger than Michael Angelo when he accomplished his stupendous "Last Judgment;"

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granges, fuye, prés et saullaye, le tout Cloux à murailles, aussi contenant quatre arpens ou environ et joygnant audit lieu du Cloux et tout en une tenue, et ses appartenances. Ensemble une pièce de pré et saullaye assise hors la dite muraille contenant demy arpent ou environ.

"Item l'ostel, terre et seigneurie de Lucé près ladite ville d'Amboise, contenant en maisons, granges et terres quinze arpents de tenue ou environ en cinq pièces."

[1] Before mentioned as being now in the Royal Academy.

THE VIRGIN SEATED IN THE LAP OF SAINT ANNE.

In the Louvre.

than Titian when he painted some of his finest works; than Tintoretto when he executed his seventy-four feet of "Paradise" in the ducal palace. But Leonardo's strength, put forth in so many different directions in youth and middle life, did not last him through a protracted old age, as in the case of these painters. From the time of his retirement—or exile, as perhaps he considered it—into France, he no longer occupied himself with plans for any great work, or at all events he never put his plans into execution, nor, with the exception of the canal of Romorentin, for which designs have been found among his manuscripts, does he seem to have been consulted on any engineering undertaking such as had occupied so much of his time in Milan.[1]

It was evidently as an artist that he was valued in France; and it was, perhaps, in the hope that he would establish a French Academy, and found a School of Art in France as he had done at Milan, that Francis I. brought him across the Alps. The French school at this time had scarcely advanced beyond manuscript illumination, in which it had excelled as early as the fourteenth century. Jean Fouquet, "peintre et enlumineur" to Louis XI., had carried this branch of painting to great perfection; but Louis XII., in his wars in Italy, had seen some of the great monumental works of Italian art, and Francis I., treading in his footsteps, had conceived the idea of importing the Italian style into France, an idea which, as before said, he probably hoped to carry out by means of Leonardo, but which he only succeeded in doing when, many years after, he invited Il Rosso (Maître Roux), Primaticcio, and Nicolo dell'Abbate, to decorate his palace at Fontainebleau. These artists

[1] In the "Codex Atlantico," we find a little note saying that on the Vigil of St. Anthony, two days after the departure of the king, he set out from Romorentin for Amboise. This was probably in January, 1518. This is one of the very few records that have been found of his residence in France.

undoubtedly imported Italian art into France, but it was the art of the decadence, the art of the Italian mannerists, that they imported, and by this means, says Viardot, threw the nascent French school, "dès son berceau dans la décadence anticipée où semblait se mourir l'art italien."

We know not what might have been the result had Leonardo been the teacher of the French artists and the founder of a French-Italian school, instead of these extravagant masters, who formed what is known as the Fontainebleau school, an eclectic school distinguished by its violent exaggeration; but the founder and director of the renowned Milan Academy, in which so many excellent artists were trained, had now lost the enthusiasm and energy of his youth, and cared not to trouble himself about another Vincian academy. He had no direct French pupils or followers, although his art was greatly admired in France, and he himself was, according to Michelet, "l'objet d'une telle idolâtrie, qu'à son âge de quatre-vingts ans[1] il changea la mode, fut copié par le roi et toute la cour pour les habits, pour la coupe de barbe et de cheveux."

Living so close to the castle of Amboise, where Francis I. frequently resided, Leonardo was not allowed, we may well suppose, to give up his old courtly habits; indeed, we find him as at Milan, directing, or at least suggesting, some of the entertainments at the fêtes given in April, 1517, on the occasion of the baptism of the infant son of Francis I., and the celebration of the marriage of Lorenzo de' Medici, Duke of Urbino, with a daughter of the Duke of Bourbon.[2]

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[1] He was only sixty-four when he went to France.

[2] Fleurange, a French chronicler of the time, gives the following description of these fêtes, in which, although Leonardo is not mentioned, it is probable that he took part, they being held at Amboise :—"Le baptesme fut faict au plus grand triomphe qui feust possible, et comme un tel cas appartient; car, sans les princes de France, y avoient beaucoup de princes estrangers et ambassadeurs. Et estoit

When the court quitted Amboise, Leonardo was permitted, perhaps, to enjoy the seclusion of his little château, though Arsène Houssaye, who has studied this period of Leonardo's

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toute la cour d'Amboise et tendue à arabesques, tout le dessus, qu'il n'y pouvoit pleuvoit; et estoient les deux costés le dessus tout tendus; et fut là-dessous fait le banquet, qui feust merveilleusement triumphant; et feust dancé et ballé à merveilles. Et, trois jours après, feurent faictes les nopces dudit duc d'Urbin à la plus jeune fille de Boulongne, qui estoit très belle dame et jeune; car, Monsieur d'Albanie avoit espousé l'aisnée; et ce propre jour le Roy le fist chevalier de son ordre. Et, en autres dames, il y avoit soixante et douze damoiselles déguisées, toutes par douzaine, accoustrées de toutes sortes, l'une à l'italienne, l'autre à l'allemande, et toutes ensuivant d'autres sortes, pour mieux dancer; et avoient les tambourins et les musiciens de mesme. Et estoient au banquet la mariée et tous les princes, assis à la table du Roy, tant de France que les estrangers, et tous les ambassadeurs, chacun selon leur ordre; et la Royne et Madame sa mère estoient de l'aultre bout assises; et faisoient merveilleusement beau veoir tout cela; car on portoit tout les mets avec des trompettes. Et quand le souper fut faict, feurent les danses et les carolles jusques à une heure après minuit; et y faissoit aussi clair qu'en plain jour; les flambeaux et torches y estoient; et dura le festin jusqu'a deux heures après minuit: et alors on mena coucher la mariée, qui estoit trop plus belle que le marié. Et le lendemain se fisrent les joustes les plus belles qui feurent oncques faites en France ni en la chrestienté; et feust huict jours de long le combat dedans les lices et hors des lices, et à pied, à la barrière, là où à tous les combats estoit le duc d'Urbin, nouveau marié, qui faisoit le mieux qu'il pouvoit devant sa mie. Et y feust faict, entre aultres choses, une façon de tournois, après ceux-là que je ne vis en ma vie qu'en ces lieux; car le Roy fist faire une ville contrefaicte de bois, environnée de fossés, tout en plain champ, assez grande, et y avoit faict mener quatre grosses piecès d'artillerie, canons et doubles canons, et tiroient à la vollée pardessus ladicte ville, comme si on eust voulu faire batterie. Et feust le plus beau combat qu'on ait oncques veu, et le plus approchant du naturel de la guerre. Mais le passe-temps ne plut pas à tous, car il y en eust beaucoup de tués et affolés. Cela faict, on se départist, qui feust chose mal aisée à faire; et eust esté bien pire, si chevaulx et gens n'eussent esté hors d'haleine; car, tant que haleine leur dura, ils combattirent. Après les tournois faicts, qui durèrent un mois ou six sepmaines, le Roy despescha le duc d'Urbin pour retourner en Italie, et sa femme avecques lui; et les conduisit le duc d'Albanie, que le Roy envoya embassadeur devers le pape; lequel a servit merveilleusement bien pour les affaires du Roy, et y print amitié si grande, que depuis elle a duré entre le Roy et la maison de Médicis. Et après ce, Monsieur de Lorraine se retira en Lorraine, et la pluspart des princes de France en leurs maisons."

life with more care than he has bestowed on other portions of it, tells us that even when the court was absent, pleasant society was not wanting in Amboise, that some of the priests and monks of the convent were learned men with whom Leonardo might feel a pleasure in associating, and that poets, artists, doctors, and astrologers, who had come with the court, often lingered behind for a time, making Amboise one of the "points lumineux du seizième siècle."

And yet, with all these distractions, this friendly society, this peaceful abode and lovely nature, Leonardo fell into languor and lay sick, Vasari tells us for many months, until finally, "finding himself near death, he wrought diligently to make himself acquainted with the Catholic ritual, and with the good and holy path of the Christian religion. He then confessed with great penitence and many tears, and although he could not support himself on his feet, yet, being sustained in the arms of his servants and friends, he devoutly received the Holy Sacrament while thus out of his bed."

This sentence of Vasari's, even as it thus stands in his second edition, in which it is considerably modified,[1] certainly implies that it was only when he found himself dying that Leonardo entered upon the "good and holy path of the Christian religion." And in another place in the first edition of his "Lives," Vasari, after speaking of Leonardo's natural philosophy, his investigation of the properties of plants, and his observations on the heavenly bodies, adds, that "by this means he conceived such heretical ideas, that he did not belong to any religion, but esteemed it better to be a philosopher than a Christian."[2]

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[1] In the first edition it ran thus:—"Finalmente venuto vecchio, stette molti mesi ammalato; e vedendosi vicino alla morte, disputando delle cose cattoliche ritornando nella via buona si ridusse alla fede cristiana con molti pianti."

[2] "Per il che fece nell' animo un concetto si eretico, che e' non si accostava a qualsivoglia religione, stimando per sventura assai più lo esser filosofo, che cristiano."

This passage was omitted for some reason by Vasari in his second edition; still the notion remained, to the grief of many orthodox admirers, that the great Leonardo was, to say the least, indifferent as to religion, or had imbibed the rationalistic principles prevalent in Italy in his time. It was only when his last will and testament—a testament written, as we shall see, in the most orthodox phraseology—was discovered about sixty years ago, that critics began to think that Vasari's statement must have been ill-founded, and that Catholics might after all claim the painter of the "Last Supper" as a devout son of their Holy Mother Church. "Sans ce précieux document," says Rio, who is, of course, especially anxious to clear Leonardo from this, in his eyes, fatal charge of heresy, "l'imputation calomnieuse de Vasari contre les sentiments religieux de Léonard aurait pesé éternellement sur la mémoire du plus grand génie que l'Italie eût produit depuis Dante, et l'absence de toute réfutation contemporaine de la calomnie aurait mis à néant les protestations de ceux que la beauté presque divine des œuvres rendait instinctivement incrédules sur la dépravation intellectuelle de l'ouvrier."

But in spite of this Catholic testament that recommends the testator's soul "to God, the glorious Virgin Mary, his lordship St. Michael, and all the beautiful angels, saints, and saintesses of Paradise," and that has given so much satisfaction to simple pious minds, we need not altogether disregard Vasari's evident belief in Leonardo's heretical opinions. Fortunately the charge of heresy is not such a formidable one at the present day as in the sixteenth century, when the Inquisition deemed it a duty to inquire into it, and when unquestioning obedience to the Church of Rome was insisted upon as the only safe means of attaining everlasting happiness. In Leonardo's time inquiry was looked upon as a crime, and the path of natural science was deemed a dangerous deviation from the straight road of faith. Even a century later,

Galileo, as we know, had to retract and do penance for his discovery of the movement of the earth; and it is perhaps surprising, considering Leonardo's daring study of physical phenomena, that it should not have drawn upon him a more severe judgment than that of Vasari. Artists favoured of princes, however, escaped many evils to which less fortunate mortals would have been doomed, as we learn most forcibly by Benevenuto Cellini's scandalous career; and it is not impossible that it was owing to this circumstance that Leonardo was enabled to pursue his scientific researches without drawing upon himself the fearful charge of magic or heresy, so easily made in his day.

But although the charge of magic and heresy on such grounds as these has now become absurd, it is difficult to believe that the aspiring mind of Leonardo did not burst through the bonds of Catholic thraldom as well as through the bonds of Aristotelian dogma. The scattered fragments of his manuscripts contain hints rather than assertions of great discoveries, that are, as Hallam writes[1], "according to our common estimate of the age in which he lived, more like revelations of physical truths vouchsafed to a single mind, than the superstructure of its reasoning upon any established basis. The discoveries which made Galileo, Kepler, Castelli, and other names illustrious—the system of Copernicus—the very theories of recent geologists (and it may be added botanists[2]), are anticipated by Da Vinci within the compass of a few pages, not, perhaps, in the most precise language, or on the most conclusive reasoning, but so as to strike us with something like the awe of preternatural know-

[1] "History of the Literature of Europe."

[2] See "Nuovo Giornale Botanico Italiano," quoted in "Nature," vol. ii. p. 42, which gives some interesting extracts from his treatise on "Trees and Vegetation" (published in the Roman edition of the "Trattato della Pittura"), showing that in these short notes intended for students he had actually anticipated the discovery of certain botanical laws generally attributed to savants of a much later age.

ledge. In an age of so much dogmatism, he first laid down the grand principle of Bacon, "that experiment and observation must be the guides to just theory in the investigation of nature." Venturi, also, in his "Essai sur les ouvrages Phisico-Mathématiques de Léonard de Vinci," claims Leonardo as one of the founders of the inductive method, and Sir Charles Lyell as one who "first applied sound reasoning to the facts of geology, and who taught the organic origin of fossils."[1]

The greatest philosophers, it is true, have often the most child-like faith. It may have been that Leonardo whilst exploring the whole kingdom of nature never ventured to doubt of those kingdoms of heaven and hell of which he was taught St. Peter held the keys; but if he did ever doubt, it is impossible to believe that such a mind as his should have been driven, as Vasari implies, to a death-bed repentance and renunciation of his former opinions by the terrors of the Catholic Church.

This is the real "calumny," and not the withdrawn passage concerning his "heretical ideas."

Another statement of Vasari's relating to the death of Leonardo was also long believed and is now vehemently disputed. Vasari, as is well known, makes Leonardo die in the arms of Francis I. After speaking of his devout reception of the Holy Sacrament, before quoted, he continues: "The king, who was accustomed frequently and affectionately to visit him, came immediately afterwards to his room, and he, causing himself out of reverence to be raised up, sat in his bed describing his malady and the different circumstances connected with it, lamenting besides that he had offended God and man, not having worked in art as he ought to have done. He was then seized with a violent paroxysm, the forerunner of death, when the king, rising and supporting his head to give him such assistance

[1] "Principles of Geology," vol. i.

and do him such favour as he could, in the hope of alleviating his sufferings, the spirit of Leonardo, which was most divine, conscious that it could attain to no greater honour, breathed its last in the arms of the king."

This circumstantial narrative, like many others related by Vasari, has been found to be open to considerable doubt.

In the first place it has been distinctly proved that Leonardo died at Cloux on the 2nd of May, 1519, while Francis I., it would appear, was at St. Germain-en-Laye at that date, awaiting the accouchement of his queen. It is true that the ordinance signed by the king at St. Germain on the 1st of May, and quoted by Venturi as a proof of his presence there on that day, is not conclusive, for it appears that such ordinances might be signed in the absence of the king by his secretary ;[1] but a journal of the time of Francis I. preserved in the "Bibliothèque Nationale" at Paris makes no mention of any journey of the king at this date, and etiquette, it is known, demanded his presence at that particular time at the Court of St.-Germain. Moreover, Melzi, in his letter, announcing the death of Leonardo to his brothers, does not allude to the circumstance of his dying in the king's arms, which he would most likely have done had such been the case; and Lomazzo, who also must have known something of the matter, expressly states that "Francis, king of France, *wept* when he heard *from Melzi* that Il Vinci was dead, who had painted the Last Supper in Milan, a work beyond all others."

"Pianse mesto Francesco, re di Franza,
Quando il Melzi che morto era gli disse
Il Vinci, che in Milan, mentre che visse,
La Cena pinse, che ogni altr' opera avanza."

All these small facts combined form a strong argument against Vasari, and have led to an almost universal disbelief in

[1] Aimé Champollion, "Revue universelle des Arts," quoted by Houssaye.

his pretty story, especially as the hypothesis started by Dufresne, and adopted by several writers, that Leonardo died at Fontainebleau, has proved untenable.[1]

Still, however, several modern French critics hold to the truth of the traditionary narrative, affirming, that as Vasari knew Melzi, of whom he speaks as "a handsome and amiable old man," that he probably gained the details of Leonardo's death from him, who, as he was present at the time, must have known them correctly.[2] It is still open, therefore, to those who love to cling to ancient tradition and poetical legend, as being often more truthful than petty fact, to believe in Vasari's story, there being no direct proof of its falsity.

There remains to be recorded one other circumstance concerning Leonardo's last days at Amboise that is fortunately beyond suspicion of unveracity. It is one of those dry, legal documents with which painstaking modern historians have such pleasure in sweeping away the pretty cobwebs spun by their predecessors—the last will and testament of Leonardo da Vinci —the "précieux document" spoken of by Rio as refuting the calumnious imputation of Vasari.

It was made on the 23rd day of April, 1518, before Easter,[3] and runs as follows :—

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[1] This mistake probably arose from a Flemish painter of the name of Leonard being employed by Il Rosso when he was decorating the Palace of Fontainebleau in 1530. In Leonardo's time Fontainebleau was a mere hunting box.

[2] It seems probable from other statements that Vasari knew something of Melzi, but the passage that Houssaye quotes in support of this opinion is taken from Lomazzo. This argument, therefore, as Uzielli points out, is of no value, for Lomazzo never mentions the circumstances of Leonardo's death, which he probably would have done had he heard the wonderful relation from Melzi.

[3] The year, it must be remembered, began at that time at Easter, not on the 1st of January, so that only nine days elapsed between the making of the will and Leonardo's death on the 2nd of May, although the date seems a year in advance. This difference of reckoning often causes a confusion in the records of Leonardo's life.

"Be it manifest to every person present and to come that at the court of the King our Lord at Amboise before us personally constituted, that Master Leonardo da Vinci, painter to the king, for the present residing in the place called *du Cloux*, near Amboise, considering the certainty of death and the uncertainty of his time, has acknowledged and confessed in the said court before us, to whom he has submitted and submits himself, concerning what shall be done by the tenour of his present testament and the ordering of his last will as follows:—

"Firstly, he recommends his soul to our sovereign Lord and Master, God, to the glorious Virgin Mary, to our Lord (Monsignore) St. Michael, and to all the beatified angels and saints (santi e sante) of Paradise.

"Item. The said testator desires to be buried in the church of Saint Florentin at Amboise, and that his body be carried there by the chaplains (cappellani) of that place.

"Item. That his body be accompanied from the said place to the said church of Saint Florentin by the college (chapter) of the said church, and also by the rector and prior, or by the vicars and chaplains of the church of Saint Denis d'Amboise, as well as by the minor friars of the said place.

"And that before his body be carried to the said church, the testator desires that there should be three high masses celebrated in the said church of Saint Florentin with deacon and subdeacon, and that on the same day there shall also be said thirty low masses of St. Gregory.

"Item. In the said church of Saint Denis a like service shall be celebrated, and also in the church of the said friars and minors.

"Item. The aforesaid testator gives and concedes to Messire Francisco da Melzi, gentleman of Milan, in gratitude for the services that he has rendered him in times past, all and every one of the books that the said testator now possesses, and other

instruments and drawings concerning his art and the profession of painter.

"Item. The testator gives and concedes for ever and perpetually to Battista da Villanis, his servant, the half of a garden that he has outside the walls of Milan, and the other half of his garden to Salaï his servant, in which garden the aforesaid Salaï has built and constructed a house which shall be and shall remain for ever the property of the said Salaï, and of his heirs and successors, and this in recompense of the good and kind service that the aforesaid Villanis and Salaï have rendered him hitherto.

"Item. The same testator gives to his maid servant Mathurine a garment of good cloth trimmed with fur, a hood of black cloth trimmed with fur, and ten ducats, paid at one time, and this also in recompense of the good services of the said Mathurine up to the present day.

"Item. He wishes that at his obsequies there shall be sixty torches carried by sixty poor persons, who shall be paid for carrying them according to the discretion of the said Melzi, which torches shall be shared among the four churches above-named.

"Item. The said testator gives to each one of the said churches ten pounds of wax in large candles, which shall be sent to the said churches to be made use of on the day in which the services above named shall be celebrated.

"Item. That alms shall be given to the poor of the Hôtel-Dieu, and to the poor of Saint Lazare at Amboise, and that for this purpose there shall be given and paid to the treasuries of [illegible] brotherhood the sum of seventy sous tournois.

The testator gives and concedes to the said Francesco [illegible]nt and accepting, the remainder of his pension, and [illegible] due to him at the present time and up to the [illegible]y the receiver or treasurer-general, M. Jean

Sapin, and all and every of the sums that he has already received from the said Sapin on the said pension. This, in case he dies before the Melzi, and not otherwise, which sums are at present in the possession of the testator, in the said place of Cloux.

"And likewise he gives and concedes to the said Melzi all and every of the vestments that he has at present in the said place of Cloux, not only in gratitude for the good and loving services that he has rendered him up to this day, but also for the service, interruption of work, and trouble that he will have to take in the execution of the present testament, although all is to be at the expense of the said testator. He desires and ordains that the sum of four hundred golden crowns (scudi del sole) that he has put in deposit in the hands of the chamberlain of Sancta Maria de Nova, in the city of Florence, be given to his carnal brothers resident in Florence, with what profit and emolument may be due upon them up to the present time by the said chamberlain to the said testator, from the day in which they were consigned by the said testator to the said chamberlain.

"Item. The said testator wills and ordains that the said Francesco Melzi shall be and remain alone in all and for all executor of the present testament, and that the said testament shall have its entire effect concerning all that is set down in it to be held, guarded and observed, and the said Messer Leonardo da Vinci, the testator, has obliged and obliges by these presents, his heirs and successors, with all his goods, movable and immovable, and has renounced and renounces by these presents expressly every and each thing to the contrary.

"Given at the said place of Cloux in presence of the Ma
Spirito Fleri, vicar in the church of Saint Denis d'A
M. Guillaume Croysunt, priest and chaplain; Magis
Fulchin; brothers François de Corton and Fran
monks of the convent of the minor friars of A

Raphael Morghen.

THE LAST SUPPER.

In the Convent of S. Maria della Grazie, Milan.

LA VIERGE AU FLEUR-DE-LYS.

In the Albani Palace, Rome.

[*Quary by Luini.*]

be witnesses by the judgment of the said court. In presence of the said Francesco da Melzi, accepting and commenting, who has promised by the faith and oath of his body given by him corporeally into our hands never to do, come, go or say to the contrary.

"And sealed by his request by the royal seal attached to legal contracts at Amboise, and this in sign of truth.

"Given on the 23rd day of April, 1518, before Easter.

"And on the same 23rd of April, 1518, in presence of M. Guillaume Boreau, royal notary in the court of the bailiwick of Amboise, the aforesaid M. Leonardo da Vinci has given and conceded by his testament and last will to the above mentioned Battista di Villanis, present and accepting, the right of the water that the king of happy memory, Louis XII., lately defunct, formerly gave to the said Vinci in the course of the canal of Saint Christopher, in the duchy of Milan, to be enjoyed by the said Villanis in such a manner and form as the said lord made present of it. In presence of M. Francesco da Melzo, gentleman of Milan and myself.

"And on the same day of the same month of April, in the same year, 1518, the same M. Leonardo da Vinci, by his testament and last will as above, gives to the said Battista di Villanis, present and accepting, all the furniture and utensils belonging to him in the said place of Cloux. In case always that the said Villanis survives the aforesaid Leonardo da Vinci.

"In presence of the said Francesco da Melzo, and of me, the notary.

"(Signed) BOREAU.[1]"

Nine days after the making of this testament, on the 2nd of May, 1519, Leonardo's spirit breathed its last on this earth, and went to its appointed place in God's universe.

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[1] See Appendix.

His body was laid, as he desired, under the flagstones of the church of Saint Florentin at Amboise, and the following epitaph is given by Vasari as having been made upon him :—

"Leonardus Vincius! Quid Plura? Divinum Ingenium,
Divina Manus,
Emori in Sinu Regio Meruere.
Virtus et Fortuna hoc Monumentum Contingere graviss.
Impensis Curaverunt."

Another was also added, says Vasari, which truly honoured him :—

"Et gentem et patriam noscis; tibi gloria et ingens
Nota est, hac tegitur nam Leonardus humo.
Perspicuas picturæ umbras, oleoque colores
Illius ante alios docta manus posuit.
Imprimere ille hominum divum quoque corpora in ære
Et pictis animam fingere novit equis."

Neither of these epitaphs, however, appear to have been inscribed on Leonardo's tomb, nor indeed is it certain that a tomb was ever raised to him; though it is probable that Melzi took care that the grave of the great Italian painter should not remain undistinguished in a foreign country.

But the fatality that seemed to pursue Leonardo in his works fell likewise upon his grave. The religious wars that devastated France soon after his death were rife at Amboise as elsewhere, and had little respect for the churches or the churchyards, in which tradition asserts the graves were violated and the bones that they contained scattered. At all events, before the revolution of 1789 no tomb of any note remained in the church where Leonardo was buried, and in 1808 the church itself was demolished by order of the senator, Roger Ducos. So complete was the destruction, that even the gravestones were sold, and the lead coffins melted down for the sake of their metal. No feeling of reverence or respect for the dead seems to have interfered to

prevent the most wanton carelessness. The bones and skulls of the tenants of the coffins were cast on one side, and were even picked up as playthings by children.[1]

At last the gardener of the place, indignant at such profanation, of his own accord dug a large grave and buried in it all the remains that he could find about.

After this all was forgotten, and when pilgrims from Italy inquired after the grave of the great Leonardo da Vinci, they found only a waste spot, covered with *débris* and weeds, where the church of St. Florentin had formerly stood. This was the state of things when De Pagave, in the eighteenth century, made inquiries on the subject, and endeavoured to learn whether any monument had been erected to Leonardo's memory. Nothing could then be found, although a few old inhabitants of Amboise asserted that there had once been a tomb in memory of a painter named Leonardo in the choir of the church. But if so, church and tomb had alike perished, and there seemed no chance of ever identifying the spot where Leonardo lay.

The search was therefore given up as hopeless, until M. Arsène Houssaye, Leonardo's latest biographer, reinstituted it with fresh ardour in 1863. The result of his discoveries may as well be given in his own enthusiastic language :—" Ce fut," he tells us, " avec un profond sentiment de respect que j'entrepris des fouilles pour retrouver le tombeau de Léonardo de Vinci. Les grandes figures dans les arts et les lettres sont de la famille de tous ceux qui tiennent un pinceau ou une plume. Nous avons tous un peu d'amour filial dans nos admirations et nos enthousiasmes pour les chefs-d'œuvre de ces pères de notre esprit." This feeling of " filial love " and enthusiasm was

[1] " Les enfants venaient tous les jours jouer avec les morts ; les crânes et les tibias n'étaient plus qu'un jeu de boules et de guilles."—*Houssaye.*

greatly excited by an old villager to whom M. Houssaye was conducted, who appeared to know a great deal about "ce brave Léonard," as he called the great painter. "Ah," he said, "I often think I see him walking along there," indicating the road that Leonardo must have taken in his walks from Clos Luce to the castle. "Who told you," asked M. Houssaye," "that he went that way?" "Why, I have seen him myself; I had good eyes then." "My good man," replied the disappointed interrogator, "you remember too much; Leonardo died three centuries before you were born." But the old man persisted in his statements, and led the way to the cemetery, where he pointed out the tomb of his "brave Léonard," an unknown painter of that name, who had worked and died like his great predecessor at Amboise. Undaunted by this mistake, M. Houssaye continued his labours. "Le mardi 23 juin on donna le premier coup de pioche en présence du maire et de l'archiprêtre d'Amboise. Je mis les ouvriers sur trois points: les uns pour reconnaître les fondations de l'église, les autres pour retrouver l'ossuaire, ceux-ci pour rechercher les tombeaux."

The foundations of the church were soon discovered. Several tombs containing skeletons in a good state of preservation were brought to light. Several fragments of sculpture and broken stones with illegible inscriptions were also dug up, but still, although he examined many skulls, M. Houssaye tells us, "Je *sentais* que je n'avais pas encore trouvé la belle tête de Léonard de Vinci." At last, on the 20th of August, a very old tomb was laid bare just on the spot that tradition had pointed out as the grave of Leonardo. It was near a cherry tree, "dont les cerises n'étaient si bonnes que parcequ'elles poussaient sur des morts," the gardener's daughter had before assured M. Houssaye. She was right. The roots of the cherry-tree had penetrated into the coffin and upset the vase of charcoal that it contained. "On découvrit le squelette avec un grand respect.

. . . . Après avoir détourné quelques poignées de terre et quelques racines nous vîmes une grande physionomie dans la majesté de la mort. . . . . La tête était appuyée sur la main comme pendant le sommeil. C'est le seul squelette retrouvé dans cette position, qu'on ne donne jamais aux morts, et qui semble familière à un penseur fatigué par l'étude. Le beau front semblait encore habité par la méditation." Coins were also found in or near the tomb, one a silver crown of the time of Francis I., and. two other undecipherable pieces that might easily be Italian money. At the feet of the skeleton were fragments of sandals.—"Peut-on y voir la sandale du voyageur venu de loin qui se couche après avoir bien rempli sa journée? (Certainly if one has only the vivid imagination of M. Houssaye.) Tous ceux qui regardaient avaient la foi; mais pourtant nul n'osait dire: *Ici fut Léonard de Vinci.* On recueillit avec piété les ossements, les vases, les monnaies, les cheveux ou la barbe, ce qui restait de la robe et des sandales, après quoi on chercha dans les décombres voisins si la terre avare, qui cache souvent une page d'histoire pour la restituer, ne donnerait pas un mot pour appuyer notre foi."

Under these circumstances the greedy earth thought it best to yield its hidden treasures, and a fragment of flagstone with the letters "N. C." was discovered, which on being washed yielded "I" before the "N. C." They searched again, and this time two bits of stone were found, one of which bore the name of St. Luke, the patron saint of painters, and his symbolic ox; only unfortunately this was not on the same kind of stone as the letters had been. They sought farther off, and another bit of flagstone was turned up with the letters "L. E. O."

"Pour moi," says M. Houssaye, "ces trois lettres disaient presque, LEONARD DE VINCI."

Whether these letters will prove quite as convincing to calm critics not led away by the excitement of the discovery is perhaps

doubtful, but in any case M. Houssaye merits our thanks for his persistent search and our fullest acknowledgment of the value of its results. Every mark of honour has indeed always been paid in France to the great Italian who died in her land.

Italy, also, last year bethought herself of one of her greatest sons, and erected a noble statue to his memory at Milan. The figure of the painter is very simply treated by the sculptor, Signor Pietro Magni. He stands on a pedestal apparently absorbed in meditation. At the four corners are placed statues of his principal scholars—Cesare da Sesto, Marco d'Oggione, Beltraffio, and Andrea Solario. A loan exhibition of Leonardo's works opened at Milan about the same time as the unveiling of the statue drew forth about three hundred paintings of his school from their hiding places in Italian palaces and monasteries.

Francesco da Melzi was, as we have seen, Leonardo's sole executor. To him he bequeathed all those vast manuscript treasures in which lay imbedded, as jewels in a bed of quartz, germs of great truths, first thoughts, hints at discoveries, dim revelations of scientific facts hereafter to be re-discovered by others, careless jottings-down of vague ideas and stores of knowledge such as it would seem almost impossible for one man to have accumulated, but which lay in such direful confusion that neither Melzi nor any other of his pupils dared attempt the task of working this dark and disorganized mine. Melzi when an old man still treasured Leonardo's anatomical drawings as relics, and "set great store by them," Vasari tells us, "together with the portrait of Leonardo of blessed memory."[1] Certain other writings treating of painting, design, and colouring, were, however, in Vasari's time in the possession of a painter of Milan whose name is not given. "This artist," adds Vasari, "came to

[1] These were probably the drawings now in the Windsor Collection. The portrait also is supposed to be the one now at Windsor.

STATUE OF LEONARDO AT MILAN.

see me in Florence no long time since; he had then an intention of publishing this work, and took it with him to Rome, there to give his purpose effect, but what was the end of the matter I do not know."

This work was, doubtless, the celebrated "Trattato della Pittura," or some portion of it; but the Milanese artist did not, it would seem, carry out his intention of publishing it at Rome, for it first appeared in Paris, in 1651, in a thin folio volume edited by Raphael du Fresne, and illustrated by cuts from the drawing of Nicolo Poussin and Alberti, the former having designed the human figures, and the latter the geometrical and other representations. The aid of these artists was probably necessary, Leonardo's drawings for his work being too slight to be intelligible without further interpretation. Poussin's drawings were merely in outline, but shadows and slightly sketched backgrounds were afterwards added by Errard. This first edition was in Italian, printed from a manuscript copy in Du Fresne's possession, but in the same year, 1651, a French translation appeared by Fréart;[1] and another in 1716, which was followed by an English translation in 1721. Since then numerous editions have appeared, the most important being that of Amoretti in 1804, and the Roman edition from the MSS. in the Vatican, published by Manzi in 1807. It has also been translated into most European languages, and still forms, as Schorn remarks, "one of the best guides and counsellors of the painter."

The "Trattato della Pittura" is, indeed, an epitome or encyclopædia of the painter's art in all its branches. It is written in the driest and briefest possible style, nearly every one of its short chapters being capable of indefinite enlargement. Its instructions, as before stated, are clear and wonderfully concise,

[1] Author of the "Parallel of Ancient and Modern Architecture," translated into English by Evelyn.

but the work, as a whole, strikes one as being a grand but ill-constructed pyramid whose stones do not fit neatly into one another. "Il se refuse," says Charles Clément,[1] "à toute analyse;" and indeed its editors must have had a difficult task in reducing its chaotic confusion even into such order as they have attained.

How far the "Trattato" in its present form can indeed be considered as an original work by Leonardo is more than any critic seems able to determine. Dr. Max Jordan, who has recently published an elaborate research on the subject,[2] after a most careful study of the various versions and editions of the "Trattato," and the sources from which they have been drawn, seems to have come to the conclusion that the "Trattato," as we now know it, is but a compilation made in the first instance by the disciples and friends of Leonardo from scattered writings and notes, none of which were altogether original. At all events, none of the known manuscripts from which the "Trattato" has been printed are in Leonardo's own handwriting, which is too peculiar to be mistaken.[3]

It is possible, however, that the French MSS., that have never been properly examined, may contain the original notes for the "Trattato," from which all others have been taken. It is to be hoped before long that some one will undertake the task of analyzing and describing this vast mass of unknown treasure.

The only other of Leonardo's manuscripts besides the "Trattato della Pittura" that has been published is the "Trattato del Moto e Misura dell' Acqua."

Unfortunately Leonardo's other treatises have met with less attention than that on painting, yet we know that he left im-

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[1] "Michel-Ange, Léonard da Vinci et Raphael," 1861.

[2] "Untersuchungen über das Malerbuch des Leonardo da Vinci."—*Jahrbücher fur Kunstwissenschaft*, Leipzig, 1873.

[3] Dr. Jordan gives a facsimile of the writing of the Vatican MS., and also of Leonardo's own writing, and the two are as unlike as possible.

portant manuscript works, or as they may perhaps more correctly be called, speculative notes and reflections on hydraulics, mechanics, geometry, and mathematics, and that optics, astronomy, chemistry, botany, and indeed every branch of natural science engaged his attention. Venturi, in his essay before mentioned on the physico-mathematical works of Leonardo,[1] first gave some idea of the extent of Leonardo's knowledge on these subjects; but he only, as it were, let a lighted candle down a deep well; we see that there is water there, but only a bucketful or two has as yet been brought up.[2]

This is chiefly owing to the confused state in which Leonardo originally left his notes, and to their present scattered condition.[3] The history of the Vinci MSS. is, in fact, almost as disastrous as that of the Last Supper, and so many of his other works. Even in Melzi's time, some, as we have seen, must have passed out of his possession, and Melzi's son appears to have parted with them with the greatest indifference. About the end of the seventeenth century, however, most of the manuscripts were collected in the Ambrosian at Milan; but the French, in their last conquest of Milan by Napoleon, possessed themselves of fourteen of the principal, leaving only two, that now form the "Codex Atlantico" at Milan. As the French have seldom deemed it necessary to return their acquisitions of war, the big folio volume containing some of the most important writings of Leonardo still remains in the Bibliothèque Nationale at Paris. It consists of 392 pages, and bears the following title printed in gold :—"DISEGNI

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[1] Published in 1797.

[2] The "Codex Atlantico" that still remains at Milan has lately been examined, and the results given in a folio work, "Saggio delle Opere di Leonardo da Vinci." Milan, 1872. This is, we may hope, a step towards the publication of the whole of the manuscripts.

[3] For example, one page of the "Trattato del Moto" is at Venice, others at Milan, and others at Paris and London.

DI MACCHINE DELLE ARTI SECRETI ET ALTRE COSE DI LEONARDO DA VINCI RACCOLTE DA POMPEO LEONI." Many other manuscripts are to be found in other collections, and especially may be mentioned the volume in the Arundel Collection in the British Museum. This contains, like most of the others, rough notes, chiefly on mathematics and physics, with various arithmetical and geometrical problems. Several of the personal memoranda, however, before quoted, occur in this volume.[1]

There is also another MS. by Leonardo in England preserved at Holkham. All the manuscripts that are in Leonardo's own handwriting are written backwards from right to left, and have in consequence to be read by means of a looking-glass in order to be at all intelligible to ordinary students. The orthography also is very peculiar. It has been supposed that he adopted this strange mode of writing in order to guard his immature discoveries and theories from the prying eyes of the curious; but he seems to have been a great deal too careless and indifferent to take this trouble to hide his ideas. He threw his mind out, in truth, with the same prodigality as he did his money. It was sufficient for him to conceive, any one was welcome to execute. The peculiarity of his writing is better accounted for by Paciolo, who asserts positively that Leonardo was left-handed. He probably invented it as easiest to himself in the first instance, and retained it as being original and individual. He could, however, write when he liked in the usual manner, as is proved by several of his letters, written from left to right in ordinary caligraphy.

Of his poetical writings (we are expressly told by Vasari that he was an improvisatore) only one sonnet remains preserved to us by Lomazzo, and this is a moral rather than a poetical effusion. Very different from the sonnets of Michael Angelo,

[1] See "Printed Catalogue of the Arundel MSS." p. 79.

in which we find the deep melancholy of the artist's soul expressed. Leonardo only gives us this good advice—

" Chi non può quel che vuol, quel che può voglia :
Chè quel che non si può folle è volere ;
Adunque saggio l' uomo è da tenere
Che da quel che non può suo vogler toglia.
Però che ogni diletto nostro e doglia
Sta in sì e no saper, voler, potere ;
Adunque quel sol può, che vol dovere,
Ne trae la ragion fuor di sua soglia,
Nè sempre è da voler quel che l' uom pote ;
Spesso par dolce quel che torna amaro.
Piansi già quel ch' io volsi, poi ch' io l' ebbi ;
Adunque tu, lettor di queste note,
S' a te vuoi esser buono, e agli altri caro,
Vogli sempre poter quel che tu debbi."

Which may be translated—

" Who cannot do as he desires, must do
What lies within his power. Folly it is
To wish what cannot be. The wise man holds
That from such wishing he must free himself.
Our joy and grief consist alike in this :
In knowing what to will and what to do ;
But only he whose judgment never strays
Beyond the threshold of the right learns this.
Nor is it always good to have one's wish ;
What seemeth sweet full oft to bitter turns.
My tears have flown at having my desire.
Therefore, O reader of these lines, if thou
Wouldest be good, and be to others dear,
Will always to be able to do right."

Francesco Melzi remained in France for some time after the death of Leonardo, retained there perhaps by the desire of Francis I.; but it is not known whether he executed any paintings during his stay, or at what date he returned to Italy.

On the 1st of June, 1519, nearly a month after Leonardo's

death, we find him writing the following letter to the brothers of Leonardo, not, as it would seem, to acquaint them with the death of Leonardo, which he supposes has already been certified to them, but to inform them of all concerning their interests in the will.

Francesco Melzi to Giuliano da Vinci and his brothers.

"To Ser Giuliano and his honoured brothers—

"I BELIEVE that the death of your brother, Maestro Leonardo, has already been certified to you. He was to me the best of fathers, and it is impossible for me to express the grief that his death has caused me. Until the day when my body is laid under the ground, I shall experience perpetual sorrow, and not without reason, for he daily showed me the most devoted and warmest affection.

"His loss is a grief to everyone, for it is not in the power of nature to reproduce another such a man. May the Almighty accord him everlasting rest. He passed from the present life on the 2nd of May with all the sacraments of holy Mother Church, and well disposed to receive them. The reason that he was able to make a will, leaving his goods to whom he liked, was on account of his possessing a letter from the king exempting him *quod heredes supplicantis sint regnicolæ.* Without such a letter he would not have been able to will away anything he possessed here, this being the custom of the country. Maestro Leonardo accordingly made his will, which I should have sent to you sooner had I been able to confide it to a trustworthy person. I expect that one of my uncles who has been to see me will soon return to Milan. I will depose it in his hands, and he will faithfully remit it to you. Up to the present time I have not found other means of sending it. In so much as concerns your part in the will, Maestro Leonardo possessed in the Santa Maria Nuova, in the hands of the treasurer, four

hundred gold crowns (scudi di sole) in notes which have been placed out at five per cent. for the last six years counting from last October. He had also an estate at Fiesole that he wished to be distributed equally among you. There is nothing more concerning you in the will, and I will say no more except to offer you my most willing service. You will find me ready and anxious to do your will.

"I recommend myself continually to you.

"Given at Amboise the 1st of June, 1519.

"Please reply by the Gondi

"Tanquam fratri vestro,

"FRANCISCUS MENTIUS."

Of Leonardo's brothers we hear no more, except in a procuration made by Antonio da Vinci to Lorenzo, his brother, in June, 1520, and in another made by Bartolommeo and Giovanni da Vinci to Lucrezia, their mother, on the 8th of July, 1820, but a son of Bartolommeo, Pierino da Vinci, is mentioned as having acquired a considerable reputation as an artist, and two other Vincis were celebrated in music in the 17th century, but it is not certain whether they belong to Leonardo's family.[1] The family, however, is still in existence, and a certain Tommaso Vinci of the present day has communicated a few family documents to Sig. Uzielli. The father of this Tommaso appears to have once had some manuscripts of Leonardo's in his possession which he gave up to a painter, of whom no trace can be found, in exchange for some engravings by Morghen.[2]

De Villanis, after Leonardo's death, stayed in France in the service of Francesco Melzi, as we find by an act of conveyance

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[1] A cantata with words by Metastasio, is preserved in the British Museum under the name of Leonardo da Vinci, but more likely it is the composition of the musician Vinci, whose name was also Leonardo.

[2] Uzielli, "Ricerche."

dated the 29th of August, 1519, in which he is described as "at present servant to the nobleman, M. Francesco da Melzo, gentleman of Milan, and pensioner of the King our Lord." This deed conveys the half of the garden at Milan, left him by Leonardo da Vinci, to Girolamo Melzi, the uncle of his new master.[1]

Salaï, on the other hand, appears to have returned at once to Italy (at least we have no further record of him in France), where he continued to work on, or from, Leonardo's designs. Indeed, he adopted his master's style so successfully, that as Rio admits, "L'œil le plus exercé peut se laisser tromper par la ressemblance." The Virgin on the knees of St. Anne in the Louvre is attributed to him by many critics, while others see in it a genuine work of Leonardo's. The subject, as before stated, was originally painted by Leonardo for the church of San Celso at Milan,[2] but what became of the original picture—evidently one of Leonardo's greatest works—is not known. The Leuchtenberg Gallery claims to possess it as well as the Louvre. The fine portrait of Margarita Coleone in the Berlin Gallery, often given to Leonardo is now reckoned as one of Salaï's undoubted works.

Thus much, by means of diligent research and patient study, have various historians, commentators, and critics been able to glean for us of the outward life of this incomprehensible Leonardo da Vinci; but as will be seen, his inner life—the real heart and soul of the man—remains as much a mystery to us as ever. Whether he was, as some writers have represented him, an intellectual epicure, skimming lightly over the surface of the troubled waters of opinion and taking no part in the struggle between Reason and Faith that was already beginning in his time, his highest philosophy

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[1] Uzielli, doc. xxvii. "Estratto di una procura fatta da Battista de Vilanis a Girolamo Melzi."

[2] See p. 30.

being to "flee from storms"—storms political, metaphysical, and theological; or whether he was one of those "to whom under ruder or purer form, the Divine Idea of the Universe is pleased to manifest itself, and across all the hills of ignorance and earthly degradation, shine through, in unspeakable awfulness, unspeakable beauty on their souls, who, therefore, are rightly accounted prophets, God-possessed, or even gods, as in some periods it has chanced," we shall probably never know. Carlyle has never considered the hero as artist, but even if he had he would not probably have taken Leonardo as his type, for he is not a hero after the modern fashion, and still less after the mediæval, but is cast in antique mould—a calm and beautiful Greek hero, with no trace of suffering or conflict on his brow. Such at least he appears in Vasari's biography and in the slight sketches of his contemporaries;[1] but in the portraits he has left us of himself we find even in the beautiful spiritual face lines of thought, care, and sorrow, that make us think that the divine Leonardo no more than other men escaped human sorrow and human tears; though except in the one line of his sonnet—

"Piansi già quel ch' io volsi, poi ch' io l' ebbi,"

we have no glimpse of them.

In his life, as in his works, Leonardo still remains a mystery, one of the most perplexing and shifting phenomena of the age in which he lived.

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[1] Lomazzo, in assigning to each of the great painters of his age a symbolic animal and metal, gives to Leonardo the lion as a symbol and gold as an attribute.

LEONARDO DA VINCI IN SCIENCE AND LITERATURE.

PROFILE SKETCH FOR HIS OWN PORTRAIT.

From a drawing in the Royal Collection, Windsor Castle.

LEONARDO DA VINCI IN SCIENCE AND LITERATURE.

THE birth of Leonardo happened at a period of the world's history singularly favourable for the development of an energetic, inquiring spirit. The gloom which since the downfall of the Roman power had dwelt upon civilized Europe during what, even with all admissible exceptions, were justly termed the Dark Ages, was rapidly dispersing. Poetry, never at any one period wholly silent, had already given forth a glorious morning welcome to the new birth of art; painting, disengaged from the harsh trammels of timid asceticism, was unveiling life-like and tender forms. Contemporaneously, or even earlier, sculpture had begun to render homage to that beauty which superstition, enfeebled by the terrors of constant war and pestilence, had execrated and fled from as diabolical. Music, which, thanks to Guido of Arezzo, had now the means of recording her progress, and advanced by the discovery of the rules of harmony to the dignity of a science, was inspiring with rhythm and melody the *trouveurs* and minstrels of all countries. The sisterhood of art preluded the near revival of science. But although some gleams of knowledge had already pierced the general twilight,

and some intellects had already shown symptoms of rebellion against the fetters which authority had long ago imposed, Science had to encounter far more serious obstacles than had impeded the progress of her sister. Life begins at the heart, and an appeal to the feelings met with a readier welcome than a demand for the exercise of calm judgment. Princes, confident in brute force, saw no need for learning; the ignorant among the clergy held in holy horror what it gave them trouble to comprehend; artizans were wearied by demands upon their mental powers, already, it may be, severely taxed, and the mass of the people, as ever, echoed the cry of their blind leaders. Altogether the age seemed far from propitious to the revival of that knowledge which the ancients had with wisely-extended phrase termed philosophy. Yet even now the hour had come to shake off the slumber of ages, and the *ignes fatui* of alchemy, magic, and astrology were preceding, mingling with, and gradually fading before the steadily advancing dawn of true science.

It was at this point of history, when the fall of Constantinople was just about to terminate the record of a thousand years' trouble, and inaugurate a new era, that Leonardo was born.

One of a numerous family, but with the stain of illegitimacy on his birth, these circumstances may possibly tend to explain the undoubted fact that far less than the ordinary amount of care was bestowed on Leonardo's education, which indeed appears to have been for some considerable period limited strictly to the mere elements of writing and arithmetic. There was never, perhaps, a mind to whom so dangerous an amount of liberty could have been so harmlessly, nay, so profitably entrusted, as that of the young Leonardo. In whatever direction his mind's eye turned, he discerned paths which must lead to great discoveries (for had they not already done so?), but choked up, long untravelled, and with few or no guides to direct the doubtful traveller. Such conditions, calculated to dismay a timid

inquirer, were especially fitted to arouse the ardent energies of the young artist. It may be fairly said of him that he triumphed in the contemplation of the darkness on which he felt himself destined to direct the light of truth.

As might be expected, the fine arts offered the easiest field for the exercise of his youthful strength, and it is not wonderful to find him singing his own songs to his own harp, renowned as a courteous cavalier and admirable dancer in the festal city of Florence, then in the high tide of that excessive luxury which, in a few years, was to bring upon her inhabitants the withering indignation of Savonarola. But art alone was insufficient food for this great spirit,

> "Yearning with desire
> To follow knowledge like a sinking star
> Beyond the utmost bound of human thought."

In all branches of literature and science his universal genius loved to test its powers; in all he added line upon line, precept upon precept, at first with little care for practical ends, and enjoying discovery merely for its own pleasure, till he seems to have been startled by the immense bulk of his own accumulated observations. When, therefore, he undertook the task of classifying and reducing to order his manuscripts, it is little wonder that Time overtook him with his work yet incomplete, and that in science as in art, his place must be judged, not merely by the few complete works now existing, but by the numerous hints, plans, and sketches filling the fourteen great volumes which, dying at the comparatively premature age of 67, he bequeathed to his friend and scholar, Francesco Melzi.

Did we, in fact, possess all these volumes, we might, by painful and reverent search, carry out the work which he proposed to himself, and thus by degrees trace out in its true proportions the mighty image of the universal inventor. But this has been denied us. Various have been the vicissitudes to

which this valuable legacy has been exposed; and it is with no small indignation that we find the family of Melzi, within 70 years of Leonardo's death, so utterly ignorant of its value as to allow thirteen volumes to be abstracted, and when (so Mazenta informs us) he managed to restore them to the original owners, the then chief of the family "wondered he had taken so much trouble, informed Mazenta he might keep them, and added that there were many more which had lain for years in the garrets of his villa."

It does not enter into the scope of this notice to follow minutely the various fortunes of the different parts of Leonardo's legacy. An Italian author (Gilberto Govi) has traced with reverent accuracy the course of many volumes, till, like the pilgrims on the bridge of Mirza, they suddenly disappear from sight. The Earl of Arundel and Consul Smith of Venice appear in Govi's pages among the accidental possessors of uncertain portions; and so numerous have been their casualties, that the reader is rather surprised to find thirteen volumes still remaining in the Ambrosian Library of Milan in 1796. So rich a prize was not likely to escape the plundering hands of the French, and, seemingly through negligence of the Austrian Commissioner in 1815, one only of the fourteen was restored to Milan. Happily this one was the most important, being that long known by the title of "Codice Atlantico," having been compiled by mounting near 400 designs from the master's hands upon drawing paper, many of which contain notes of explanation written, as was his ordinary habit, with the left hand, and from right to left, so as to require the aid of a mirror to render them legible. The volumes which still remained at Paris were subject, so Govi states, to further mutilations; but we do not propose to carry this narrative further, our object being simply to point out the difficulties inevitably accompanying any attempt to reconstruct from such imperfect materials a true and correct image of their author. Nor, even

could the depredations of centuries be restored, would a simple reprinting of this huge mass of notes do anything like justice to Leonardo's memory. Frequently a first idea, remarkable for its originality, and destined in the hands of future discoverers to produce rich fruits, appears in these pages, is developed so far as to show how clearly its capabilities were foreseen by the author, and then breaks off short without any reason which we can even conjecture.

On the other hand, we find suggestions carefully noted down, and deductions drawn which the author's better judgment disavows, and which some few pages onwards are overthrown by their original construction. Of these a notable instance is to be found in the treatise "On the Motion and Power of Water," in which Leonardo has devised an ingenious instrument for perpetual motion, a chimæra which he afterwards abandons, and the impossibility of which he demonstrates with the clearest logic. But nothing can more plainly show the author's sense of the imperfect character of these notes than his own "Codicetto," or preface, the original of which is among the treasures of the British Museum, part of which we commend to the notice of our readers :—

"Cominciato in Firenze in casa di Piero di Braccio Martelli, addì 22 di marzo 1508; e questo fia un raccolto senza ordine, tratto di molte carte, le quali ho qui copiate, sperando poi di metterle alli lochi loro, secondo le materie che di esse tratteranno; credo che avanti ch' io sia al fine di questo, io ci avrò a replicare una medesima cosa più volte, sicchè, lettore, non mi biasimare, perchè le cose son molte, e la memoria non le può riservare, e dire: questa non voglio scrivere, perchè dinanzi la scrissi: e s' io non volessi cadere in tale errore, sarebbe necessario che per ogni caso ch' io ci volessi copiar sù, che per non replicarlo, io avessi sempre a rileggere tutto il passato, e massime stando con lunghi intervalli di tempo allo scrivere da una volta a un' altra."

"Begun at Florence in the house of Piero di Braccio Martelli, on the 22nd March, 1505; and this can be a collection without order, extracted from many papers which I have copied, hoping hereafter to arrange them in their proper order, according to the subjects of which they treat. I expect that before concluding this task I shall have to repeat the same thing more than once; wherefore, reader, do not blame me, seeing that the things are many, and I cannot keep them in my memory and say, 'This I will not write because already I have written it.' Were I anxious to avoid falling into such an error, it would be necessary for me whenever I proposed to copy anything, for fear of repetition to read over all previous matter; particularly considering that long intervals of time exist between my times of writing."

Bearing, therefore, in mind the fragmentary nature of the evidence on which alone we have to rely, we proceed to show from his own manuscripts how many were the varied branches of knowledge in which he had made actual progress, how few those in which he had not at least pointed out to others the true road to useful discovery. It was especially fortunate for Leonardo that his early dedication to the fine arts left his mind free from the foolish talk of schoolmen, his inquiring spirit untrammeled by the unreasoning deference then paid to the great names of Aristotle and Plato. Then and long afterwards, as the well-known history of Galileo demonstrates, a wish to learn from nature rather than from any master, however great, was held the height of insupportable presumption. All honour then to one who so far anticipated both the Tuscan astronomer and the "eagle spirit" of Bacon, as to originate and inculcate such maxims as we shall now proceed to place on record :—

"Experience never deceives; only man's judgment deceives when promising effects which are not supported by experiment."

"Speculators, do not trust authors who wish to interpret between nature and man through their own imaginations, but

trust only those who have exercised their understandings upon the results of their own experiments."

Having laid down carefully the rules by which experiments should be conducted, he observes:—"If then you ask me, 'What fruit do your rules yield, or for what are they good?' I reply that they bridle investigators, and prevent them from promising impossibilities to themselves and others, and so being rated as fools or cheats."

"Many will think themselves warranted in blaming me, alleging that my proofs are contrary to the authority of certain men whom they hold in high reverence . . . . not considering that my facts are obtained by simple pure experiment, which is our real mistress."

But these doctrines, however simple and manly they may seem to us, were little likely to find favour with the age in which they were uttered. The warning (uttered probably rather to himself than to any reader) that "patience against injustice is as a garment against the cold, and that as the cold increases there is no other remedy than to don additional wraps, and so bid defiance to your assailant," was not wrung from a tranquil mind; nor can we wonder that when Savonarola was proclaiming Christ King of Florence, and calling, not vainly, upon the citizens to offer in his honour a holocaust of books, paintings, rich tapestries, and all the luxuries of the sinful world, a man like Leonardo should be deemed a heretic or even an atheist. Vasari, after referring to his "caprices" relative to natural philosophy, adds that by these methods he had brought his mind into so heretical a state as to be unable to attach himself to any form of religion, and indeed seemed to care more for being a philosopher than a Christian. A dangerous man, truly!

Nor were the following speculations as to mind and matter likely to find favour in priestly councils. "Spirit has no voice, for where there is voice there is body, and where there is body

there is occupation of place . . . . There can be no voice where there is no movement and percussion of air, no percussion of air without some instrument, no instrument incorporeal. A spirit cannot have either voice, form or force . . . . Where there are neither nerves nor bones, no force can be exerted in movements made by the imagined spirits." Maxims such as these—not out of place even in the enlightened nineteenth century—seemed greatly so in the fifteenth, and a marginal note found in the "Codicetto Trivulziano" :—"Pharisees, that is to say, Friars"—was not made by a favourite of the priestly order. Indeed, it is not unlikely that the artist alludes to some actual persecution when we find him writing: "When I made the Lord God an infant, you imprisoned me; now if I make him grown up, you will treat me worse." Throughout the whole of his life, indeed, the comments which it continually pleased him to make are brief but comprehensive evidences of the many painful thoughts that could not but fill the mind of an earnest man, frequently sorrowful yet never cankered, zealous to gather from all events some fruitful precepts for future self-guidance, till, conscious, as no doubt he was, that the end was approaching too soon for what he had hoped to achieve, he utters the regretful cry, "When I thought I was learning to live, I was but learning to die." And even this cry is soon repressed. Accustomed throughout life to take with equal thanks the buffets and rewards of fortune, he again takes his pen to note down that "A life well spent is long;" and yet again, "As a day well spent gives a joyful sleep, so does life well employed give joyful death."

Some attention should be given to the unsatisfactory condition of the Italian language at this epoch. The same struggle which the English tongue had to sustain against the preponderating reverence for Latinity implanted in the minds of learned men was fought out in Italy; and while Spenser was sorely tempted

to leave posterity, instead of his nobly rhythmic Faerie Queen, a mountainous mass of barbarous hexameters, so Petrarch, thinking lightly of his sonnets, rested his hopes of fame on the dreary Latin epic of "Africa." No wonder, therefore, that in the mere elementary paths of orthography and grammar Leonardo found his own native tongue woefully defective. There, as elsewhere, he had to lay down rules and establish principles; there, as elsewhere, whatever his hands found to do, he began to do with all his might. In one of the Ambrosian manuscripts now detained at Paris, we find a chapter on grammatical conjugations. In the "Codice Trivulziano" frequent evidences exist that the writer felt the need of a dictionary of his native tongue, and was preparing to supply the want; and while his own orthography in its tentative character shows how unfixed his ideas on that matter were, with the true strength of genius he accepted the responsibility of inventing new words whenever the need for doing so was clearly obvious.

Of the songs which, as we are told, he used to accompany on his lyre, we possess no specimens, nor, perhaps, is the loss great; they were probably easy improvisations, owing their reputation rather to the good-natured judgments prevalent in that age than to any sterling thoughts which the world would not willingly let die. A few sonnets he wrote—would he have been Italian had he not done so?—but they are of the dogmatic, self-anatomizing character common to that age, and closely copied by our own sonnetteers of Elizabethan times. Two detached lines—

> "Deh! non m' aver a vil, ch' io non son povero;
> Povero è quel che assai cose desidera"—
>
> *Hold me not vile, for lo! I am not poor;*
> *The poor is he who over much desires—*

seem as though they might be expanded into a Shakespearian sonnet.

It is, however, more pleasing to meet Leonardo in a field of

which he was surely master, and the following fragment, in which he deals with the history of art, will make us greatly regret the loss of the remainder.

"Il pittore avrà la sua pittura di poca eccellenza, se quello piglia per autore l'altrui pitture. Ma se egli imparerà dalle cose naturali, farà buon frutto, come vediamo ne' pittori dopo i Romani, i quali sempre imitarono l'uno dell' altro, e di età in età sempre andò detta arte in declinazione. Dopo questi venne Giotti fiorentino, il quale nato in monti solitari, abitati solo da capre e simili bestie, questo sendo volto della Natura a simile arte, cominciò a disegnare su per li sassi gli atti delle capre delle quali era guardatore, e così cominciò a fare tutti gli animali che nel paese trovava, in tal modo che questo dopo molto di studio avanzò non che i maestri della sua età, ma tutti quelli di molti secoli passati. Dopo questo l' arte ricadde, perche tutti imitarono le fatte pitture. . . . insino a tanto che Tommaso fiorentino cognominato Masaccio mostrò con opera perfetta come quelli che pigliavano per autore altro che la natura, maestra de' maestri, s'affaticavano invano."

"That painter will produce works of poor quality who takes for his guide the paintings of others; but if he will learn from natural objects, he will bring forth good fruit. This we may see in the later Roman painters, who, by continual copying of others from age to age, brought their art into decadence. After these came Giotto, the Florentine, who, brought up in lonely mountains, with no other inhabitants than goats and such like beasts, yet found himself urged by nature to follow art, and began by sketching upon stones the attitudes of the goats whose keeper he was, and, proceeding to copy all the animals he could find in the neighbourhood, acquired by this means such a degree of skill as to surpass not only the artists of his own time, but all those of many past ages. After him art again fell off, through continual imitation of pictures. . . . until Tommaso of Florence,

known as Masaccio, showed by the perfection of his work how fruitless were the labours of those who followed any other leader than Nature, the mistress of all masters."

We have given the above passage almost *in extenso*, as it is highly interesting to receive from another source the confirmation of the well-known story of Giotto, and likewise to note the clear discernment and frank recognition of the merits of Masaccio by his fellow-artist.

Our limits will not permit us more than a glance at sundry humourous and satirical remarks of Leonardo to which he chose to affix the pompous title of prophecies. Playful allegory, descending even to the level of punning—tell it not in the halls of the Della Cruscans—characterizes most of these maxims, among which his old foes the "Pharisees" come in for many a sly hit. It is easy to recognize who are the "numerous crowd that heap up great riches, paying for the same in invisible coin;" nor can we doubt "those who avoid hard work and poor living, that they may inhabit rich palatial edifices, clearly demonstrating that by so doing they exalt the glory of God;" or who "sell publicly things of great value which never were theirs, nor in their power, without any license from the real owner." Such keen satire as this—and his writings abound in such—sufficiently explain the charges of naturalism, rationalism, and, to crown worthily the edifice of calumny, of atheism, to which Leonardo was exposed. Before quitting this part of our subject, allusion must be made to the fables with which he seems to have occupied his leisure moments, one of which, in a slightly abbreviated form, is here presented to our readers, who may possibly trace in the old Florentine somewhat of the playfulness which, in our own time, has enabled Hans Andersen to anatomize the emotions of darning needles and morocco slippers.

"A razor having come out of the sheath in which it was usually concealed, and placed itself in the sunlight, saw how

brightly the sun was reflected from its surface. Mightily pleased thereat, it began to reason with itself after this fashion: 'Shall I now go back to the shop which I have just quitted? Certainly it cannot be pleasing to the gods that such dazzling beauty should be linked to such baseness of spirit! What a madness it would be that should lead me to shave the soaped beards of country bumpkins! Is this a form fitted for such base mechanical uses? Assuredly not; I shall withdraw myself into some sheltered spot, and in calm repose pass away my life.' Having therefore concealed himself for some months, on leaving his sheath one day, and returning to the open air, he found himself looking just like a rusty saw, and totally unable to reflect the glorious sun from his tarnished surface. He lamented in vain this irreparable loss, and said to himself, 'How much better had I kept up the lost keenness of my edge by practising with my friend the barber! What has become of all my brilliant surface? This abominable rust has eaten it all up.' If genius chooses to indulge in sloth, it must not expect to preserve the keen edge which the rust of ignorance will soon destroy."

Leonardo's handwriting, as we have already said, ran from right to left, after the fashion of eastern nations, which served therefore to conceal his thoughts and notes from over-curious eyes. Very rarely do we find him adopting the ordinary method of writing from left to right; and the reason of this peculiarity has been explained by Paciolo, who informs us that the figures for his work on "Divine Proportion" had been drawn by Leonardo "with that ineffable left hand which was mathematically trained to all exercises." In a subsequent passage we find: "We may write also reversedly and with the left hand, so as not to be read without a mirror, or by looking on the back of the paper against the light, as you can understand without farther explanation, and as is practised by our luminary of painting, Leonardo da

Vinci, who is left-handed, as has been often mentioned." It is easy to see that a left-handed man would find it easier to form characters running from right to left than from left to right in the usual fashion; and thus the painter's oriental fashion of writing may have originated in the indulgence of a natural tendency, subsequently developed into habit by the advantage which he found in concealing his private jottings from the eye of a casual observer. Da Vinci's manuscripts are by no means easy to read without a mirror, and even with this aid the unusual style of orthography, abbreviations, omissions and oversights, render the reading unpleasant without long and patient practice; so that it is by no means wonderful to find writers, especially foreigners, who have declared Leonardo's works to be totally useless, as being written in an incomprehensible cipher. But it is time to pass away from the general field of literature and philosophy, in which, after all, our author's footsteps are not very deeply printed, in order to trace his career in those branches of positive science to which he has devoted long and painful study.

Beginning, therefore, with anatomy, which, as Vasari informs us, Leonardo studied under Marcantonio della Torre, who at that time taught this science at Pavia, it is sufficient to allude to the admirable collection of drawings which form part of the Windsor Collection, and which seems to have been purchased by the Earl of Arundel for Charles I. These drawings apparently belonged at one time to Pompeo Leoni, as the cover of the book bears the following inscription in gold letters: DISEGNI . DI . LEONARDO . DA . VINCI . RESTAURATI . DA . POMPEO . LEONI . Several of these plates were engraved and published by Chamberlayne in 1812; and here, as likewise in the "Codice Atlantico," may be found evidence of the earnest search he pursued into all the mysteries of nature. Judging from a note respecting the phenomena of vision, which he reminds himself is

to be inserted "in your Anatomy," it is probable that a treatise on human anatomy existed, though possibly only in the teeming brain of the author. Vasari distinctly alludes to an "Anatomy of the Horse" designed by Leonardo; but the work seems to have perished. Determined as Leonardo was to pursue his investigations beyond the ordinary superficial demands of art, his sense of beauty and fitness prevented his falling into the error which betrayed into extravagance many of his contemporaries; nor do we ever find in his works that over-elaboration of anatomic detail, which, to use his own phrase in the "Trattato della Pittura," causes the figure to resemble a sack of walnuts. It may not be unreasonable to conjecture that his refined mind may have found relief from the use of the mangling scalpel of the anatomist in contemplating the rich and varied family of fruits and flowers, and that the pleasure derived from the examination of their forms, textures and development, inspired him with the ideas disclosed in many of his fables, wherein trees and fruits frequently play the principal parts, instead of the men and animals of Æsop. His mind was, however, too active to linger long in the region of simple contemplation, and we shortly find him engaged in accurately examining the physiology of plants. In the sixth book of the "Trattato della Pittura," published at Rome by Manzi, after a copy found in the Library of the Vatican, are to be found many interesting observations respecting the distribution and symmetry of leaves and branches, and the formation of bark and wood. How much may have been lost in the missing volumes from which this incomplete Vatican copy is known to have been compiled in the seventeenth century, must remain matter of conjecture. Sig. Gustavo Uzielli, an enthusiastic collector of all relating to Leonardo, published in 1869, in the first number of the "Nuovo Giornale Botanico Italiano," a short treatise upon some botanic observations by Leonardo da Vinci, in which he claims for his

illustrious countryman the credit of having first laid down the fundamental laws regulating the distribution of leaves, which had hitherto been assigned by botanists to Brown, an Englishman, whose work on the subject appeared only in 1658. In the "Codice Atlantico" are to be found many notes testifying to the minute accuracy of his observation, which want of space precludes us from citing at length, and which, moreover, do not contain facts now valuable to the world, but which must be read with the constant recollection of how many years elapsed ere another such observer came to record them. One instance out of many may serve, wherein he informs us that the circles of wood in the section of a branch denote the age of the limb; their density depends on the dryness or wetness of their natal seasons; also that their position relative to the compass must be taken into account, and that the centre of a tree will be found nearer to its southern bark than to its northern.

Among his botanic observations in the "Codice Atlantico" is a receipt for colouring leaves, and so applying them as to effect what is now called nature-printing; and his feeling for the beauties of flowers and foliage is evidenced by numerous incidental sketches occurring throughout his manuscripts, as likewise by the picture alluded to by Vasari as a production of his early years, representing a nosegay gemmed with dewdrops, then in the possession of Pope Clement VII. but now unfortunately lost.

Necessity as well as choice occasioned frequent journeys across the Alps and Apennines, during which Leonardo's observant eye was not idle. Fossil shells and the fish of Monte Bolca became the objects of his speculation; and instead of contenting himself with the vague notion that they were caprices of nature, or referring them to the stars or the devil, the favourite resources of his contemporaries for explanation of all troublesome questions, he recognized them as animals of a pre-historic age,

embedded in mud once soft though now hardened into stone. With similar clearness of mental vision he discerns many geologic phenomena, the reasons of which seem at once obvious to him, though centuries had to pass away before any other philosopher was to reveal them. He sees clearly the gradual denudation of mountain peaks by the subsidence of the water in which they were once submerged, he perceives that the direction of a falling body must be affected by the earth's rotation, he makes a note to "write to Bartolommeo, the Turk, about the ebb and flow of the Pontic Sea, and to get information as to whether a similar phenomenon exists in the Hyrcanian or Caspian Sea." The climatology of the heavenly bodies attracts his attention, and he notes that "the moon must have a spring and summer every month, with greater variations of temperature and colder equinoxes than we have;" he speculates upon the reason of the appearance, well-known, as Coleridge reminds us, to weather-wise ballad-writers, of the "new moon with the old moon in her arm;" and in one instance where we find him falsely attributing to our own eyesight the twinkling of the stars, it is but just to remember that Aristotle, from whose dogmas it was at that time all but atheistic to differ, had made a similar assertion. Moreover, astronomy not being as yet free from the entanglements of astrologic dreams, nor provided with the mighty aids to personal observation which the succeeding century was to bring, we may rather wonder at the courage of the few daring minds who ventured on so great a quest and brought back so much fruit of truth, than comment on the occasional errors into which they may have fallen.

Though Leonardo had not the happiness to witness the astronomic revelations the approach of which he must have clearly presaged, in geography he was more fortunate. It was the age of great discoveries; Vasco Diaz doubled the Cape of Storms when the artist was in youthful vigour; in his fortieth year

Columbus had reached the West Indies, and shortly afterwards the continent of America; as he grew older he must have heard wondrous tales of Mexico and Brazil, while before this Magalhaens had opened the portals through which the circumnavigation of the globe was to be effected. No wonder that the friend of Amerigo Vespucci, whose portrait by Leonardo, once owned by Vasari, has now perished, should have revelled in the numerous additions that were being daily made to the great object of his life—actual knowledge as distinguished from dogmatic assertions. Without assigning to him as undoubted the construction of the planisphere found by the late Mr. Woodward among his MSS. at Windsor, which has been ably described and illustrated by Mr. Major, there remain among his papers fully sufficient proofs of his geographic knowledge. In the "Codice Atlantico" are several specimens of plane projection applied to the earth's surface, a sketch of a small map of Europe, a rough draught of North Africa, from Gibraltar to the Red Sea, another of Asia Minor, and numerous topographic plans of the districts in which Leonardo planned the construction of reservoirs or canals.

In the same volume may be read the quotation from the works of S. Augustine, in which the Bishop of Hippo refuses to believe in the possibility of the antipodes, renewing the arguments previously employed on the same subject by Lactantius and others. Some have wondered to find copied by Leonardo an opinion antagonistic to the ideas of progress, and, as we now know, not founded on truth. But not only was the impossibility of an antipodeal world obstinately held at that time by many who supported themselves by quotations from both sacred and profane authors, but it should not be overlooked that the existence of a quotation by no means necessarily infers belief on the part of the copyist. It seems, at least, equally probable that Leonardo may have wished to reiterate his oft-renewed protest

against over-much confidence in those who have allowed their imagination to act as interpreter between themselves and nature, and that the passage from the "De Civitate Dei," book xvi., was preserved by him as an instance of erroneous judgment, and consequently a notable weapon against the enemies of his own doctrines in natural philosophy.

The geometric knowledge of Leonardo needs not to be proved very fully, it being sufficiently obvious that without practical knowledge of the science he could not have become the mechanical engineer he indisputably was. That he should have made great progress in pure mathematics was not to be expected from one who in all branches of science sought earnestly for immediate results; but the friend and fellow-worker of Paciolo could not be indifferent to exact science, and there is something touching in the memoranda we find in the "Codice Atlantico" respecting single copies of works, as contrasted with the easy command of resources at the disposal of a modern student. "Obtain Vitellone's 'Treatise on Mathematics,' which is in the library of Pavia.—A complete Archimedes belongs to the brother of Monsignore di Santa Giusta in Rome. He is said to have given it to his brother who is in Sardinia; it was formerly in the library of the Duke of Urbino. It was removed in the time of the Duke Valentine." These notes—and there are many such—clearly emanate from a mind thwarted by poverty of help.

When, in 1497, Frate Lucca Pacioli of Borgo S. Sepolero presented to his three great patrons—Lodovico Sforza, Galeazzo San Severino, and Pier Soderini, his work upon "The Divine Proportion," he informs them that the figures of the regular solids as represented in relief were the work of that most worthy painter, draughtsman, architect, musician, the all-accomplished Leonardo da Vinci of Florence, whom we found in the city of Milan in the pay of the excellent duke thereof, Lodovico Maria Sforza, in the years 1496-99, at the end of which time, we, being

obliged by certain events in that place to leave it at the same time, became domiciled together at Florence."

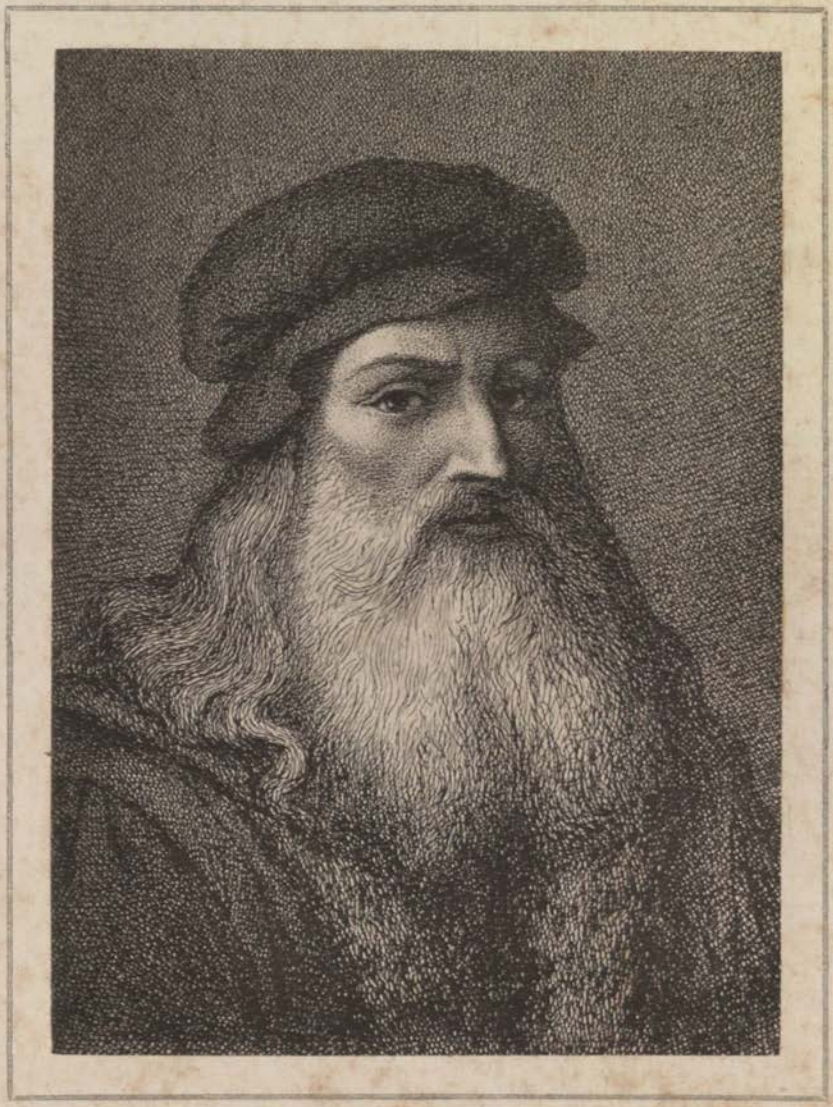
Other equally laudatory sentences show clearly that reference is here made to the original drawings, and not the engravings, which were not executed till 1509 by the workmen of the office where it was printed. Very many diagrams, both for the use of Pacioli, and others, not to be found in this work, occur in the "Codice," and the precepts which accompany them seem to indicate an intention to publish a treatise on perspective. That such intention was never carried out will surprise no one who has studied the life of this universal schemer, and in this instance the relinquishment may have been caused by his learning that Pier della Francesca had actually completed a valuable work on perspective, copies of which are to be found in the Vatican and Ambrosian libraries, and probably in some other public institutions. Very many rules of perspective are scattered through the papers of our artist, of which we shall mention one only, and that for the sake of the epigraph accompanying the figure, in which he signs himself as "Leonardo da Vinci, the disciple of Practice," thus manifesting his unceasing determination to serve only under the banner of experience. The process of attaining correct images of bodies seen in perspective by outlining them upon an intervening glass plate, supposed to have been first devised by Albrecht Dürer, is distinctly mentioned both in the "Codice Atlantico" and in the "Trattato della Pittura."

From perspective to the laws regulating light the step was short and easy; indeed, most writers of that and the preceding centuries used the words perspective and optics as convertible terms. Alhazen, Vitellone, Pecham, Roger Bacon, and Müller (commonly known as Regiomontanus), employed the two terms indifferently, to the extent of designating the works of Euclid and Ptolemy upon the propagation, reflection and refraction of light, by the name of perspective. Having, in the first instance,

devoted himself to the practice of pictorial perspective, it was not wonderful that the character of that study should lead Da Vinci to the consideration of the phenomena of light and vision; and in this direction, rather than in the study of projection, the power of his intellect found a fair field to expand.

To ancient writers the eye had remained a mystery; of the laws of vision little or nothing was known. The great majority believed that rays of sight proceeded from the pupil of the eye, and, projecting themselves into space, touched various objects and brought back to the mind the impressions thereby received. A very few had seized the idea that light came, on the contrary, from objects to us; how the light acted upon the eye, and whence originated the sensation of seeing, none had divined. The theories of shadows and of reflection were still imperfect, because being reduced to pure geometric theorems, they had inherited from the science whence they were derived a vitality of which physical observation would have deprived them. The doctrine of refraction, although magisterially taught by Ptolemy, was still in its infancy; and the invention of spectacles in the previous century by Salvino degli Armati (if, indeed, it had not rather reached us, with other mighty gifts, from China), though useful in practice, served perhaps to retard the advance of theory. Philosophers had indeed written much, rather than well, respecting colour. Accustomed to seek in language for the facts of a science which imperatively demanded personal observation, none had attained even an approximate notion of their real nature. The science of optics, therefore, offered to Leonardo what he ever most loved—a free field for new speculation; nor is it extraordinary that so attentive an observer, careful in experiment and keen in induction, was able to make in brief time great and unexpected progress.

Whether aided by chance or by the experience of some one who had already noticed the phenomenon of the camera obscura,



PORTRAIT OF LEONARDO DA VINCI.

In the Royal Gallery at Florence.

certain it is that his study of this instrument produced in Leonardo's mind a total revolution of the theory of vision. Venturi appears to have been the first who proclaimed the fact that Leonardo in his study of the images in the camera had anticipated Giambattista della Porta, to whom has been wrongly attributed the invention, citing in proof a passage from the manuscript D now preserved at Paris, which has been since reprinted by Libri. A passage equally explicit from the "Codice Atlantico" is worth transcribing in the original,[1] the discovery being an important step in optics.

"I say that if a side of a building, or a piazza, or a landscape which is illuminated by the sun, have opposite to it a house, and that in the side of the house not exposed to the sun there be made a small round hole, all the objects illuminated will send their similitudes through this hole and will appear on the opposite wall of the house, which should be whitened, and will be there accurately and upside down. And if in many parts of the said house similar holes be made, a like effect will be produced in each case. The reason is this: we know clearly that this hole must transmit a certain portion of light into the house, and that the light transmitted by this means is caused by one or more luminous bodies. If these bodies be of various colours and forms, of various colours and forms will be the rays of the image, and of various forms and colours the representations upon the wall." A similar passage is to be found upon another leaf of the "Codice," but most readers will be of opinion that the one already cited is sufficient to show that Leonardo had fully comprehended the possibility of all the effects detailed in the "Magia Naturalis" of Porta, published in 1558. He even gives instructions how to produce the spectre of a crucifix in a dark room, clearly prefiguring the invention of the microscope for transparent objects, called by Kircher and its other elaborators the "megascope," as distinguished from the microscope, then applied mainly to opaque

[1] See Appendix.

objects. Meanwhile, Leonardo's discoveries remaining as usual hidden under his mysterious cryptography, it was left for others to explain the important facts deducible from the camera obscura. Cesare Cesariano, in 1521, ascribes its invention to a Benedictine monk, Don Papnutio; Jerome Cardan, in 1550, added to the instrument the lens; lastly, as before mentioned, Della Porta had the fortune, like Amerigo Vespucci, to establish a reputation not certainly unmerited, but founded in great part on the labours of his predecessors. That Leonardo anticipated Cardan in believing that the phenomena of the camera tended to explain the laws of vision is obvious from his own words:—"This spiracle made in a window . . . conveys within all similitudes of the bodies opposed to it. Thus may we say that the eye likewise acts."

And his knowledge of the use of the crystalline lens for producing ocular images may be fairly deduced from the following note: "I assert that the crystalline sphere is sufficient to convey appearances received to man's mind; but for this purpose a dark place is necessary." He remarks upon the movements of the iris, upon the enlargement of the pupil in comparative darkness and its contraction under the influence of light, and points out how unusually sensitive in this respect are the eyes of night-feeding animals. He had moreover constructed an artificial eye by which to demonstrate the action of the living organ, and asserts that the rays apparently proceeding from luminous points are due to the movements of the eyelids and eyelashes. Noticing, as he informs us, that "the eye retains in itself the images of luminous bodies for some time," he thence deduces that the power of sight does not, as the schools taught, emanate from the pupil, but that "the appearances enter therein," and that "images are retained by the eye for a length of time proportionate to the luminosity of the body by which they are caused," a fact which might have allayed the uneasiness of our own Newton,

who details his trouble at being haunted for some days by a spectre—the only phantasm, one would think, that would dare to haunt such a brain—the spectre of the sun. The effect of radiation, whereby luminous bodies upon a dark ground and dark bodies upon a luminous ground appear respectively larger and smaller than actuality, is frequently alluded to in his "Treatise on Painting." The diversity of the two images formed by our eyes was not overlooked by Leonardo, who infers thence that painting, which can of necessity offer but a single image to be contemplated by both eyes, cannot possibly attain to the solid appearance of nature. He is thus conscious of the want, for which, however, he cannot supply a remedy, the discovery of the stereoscope being left for the present age and for our own country. He also notes the fact that an object situated in front of an opening through which we look with both eyes, may, under certain conditions, not be seen at all. He anticipated by a long period the explanation of Francesco Maurolico, how it happens that light radiating from an extensive surface and passing through an aperture of whatever form, will, at a certain distance from the aperture, assume the form of the body from which it proceeds, not that of the aperture through which it has passed. We are tempted here to quote a passage which, although at the first glance, may appear to be dealing with things beyond human ken, offers a singular instance of the practical nature of a mind which was never content till from a general hypothesis it had evolved some particular and useful truth. The passage in question runs as follows: "All spiritual powers, in proportion as they become distant from their first or second cause, occupy larger space and suffer diminution in strength." In another place we find enunciated a corollary to the first proposition.

A remarkable instance of Da Vinci's accuracy of judgment is observable in his sketching out a method of measuring the intensity of light, which two centuries later was practised by the

Frenchman Bouguer (1729). The following is Leonardo's statement of the problem: "Given two opposite shadows produced upon a single object between two lights of double power (*doppia potenza*), and that these lights are of equal density; to discover what is the proportion of the distances between the lights and the object."

He wrote indeed a complete work upon shadows and lights, part of which was published by Manzi in the Roman edition of the "Treatise on Painting," but of which many and most important chapters have not yet been given to the world.

Dazzled, as is not unlikely, by the proofs of genius which surrounded him, Libri has ventured to ascribe to Leonardo the discovery of diffraction of light; but the passage on which he founds this assertion, referring to different though cognate phenomena of optics, cannot be held sufficient to deprive Grimaldi of any honour in this grand discovery, announced by him in 1665. While engaged in speculations relative to reflection, Leonardo failed not to note in passing what might at once have conducted him to the construction of the burning-glass, and states: "Wherever reflected rays intersect one another, the degrees of heat are increased proportionally to the number of the intersecting rays." In fact, he has left us among his sketches various combinations for the construction of convex and concave mirrors, spheric and parabolic, and has laid down a mechanic solution of the so-called problem of Alhazen, which consists in finding upon a curved mirror the point where reflection must be made, inasmuch as rays emanating from a certain place must unite their reflections at a determined point.

An explanation given, or perhaps it would be more correct to say offered, by Leonardo as to the effect of spectacles, has reached us in an imperfect condition; but one observation of his, pregnant of guidance for future ages had it but been made public, consists in his noting the fact, that whereas a glass sphere filled

with water gives behind itself a reversed image of the objects standing in front, another sphere placed behind the first will necessarily restore the image to an erect position. Here, as we see, the telescope was looming large on the horizon, and some there be who have discovered in a drawing from the "Codice Atlantico" the construction of a telescope with three lenses. This, however, must be pronounced imaginary; the group in question, as well as the notes which accompany it, referring clearly to the laws of perspective, and not to any question of optics. Here, as elsewhere, Leonardo contents himself with pointing the road which others were to follow, and nothing remains to lead us to suppose that he ever carried out the intention which, as another very short note shows, was clearly present to his mind: "Fa occhiali da vedere . . . . la luna grande." Make glasses to see . . . . the moon large.

His observations upon the blue-coloured shadows which yellow light from the north projects in a clear sky behind various bodies are worthy of notice as having induced Otto di Guericke, Buffon, Scheffer, and their successors, to investigate the cause of the complementary subjective colours in shadows, although the problem was not by any means satisfactorily solved. In the "Treatise on Painting," printed at Rome, are numerous and accurate remarks relative to harmony and contrast of colours, on the action of coloured glasses and similar subjects, which were not taken up by students of physics till long after the artist's death; and it is not unreasonable to assume that many more speculations on the question of colour might be found, could the more extended treatise be recovered which is supposed to have been transported to this country.

To a student of the phenomena of light, as we have already seen Leonardo to be, those of heat could scarcely fail to offer a tempting field for exploration; and we do in fact find various notes made by him referring to this kindred branch of philosophy.

But whether he did not carry his researches far enough, or whether—which is by no means improbable—the record of his labours has been lost, the fact remains that little of actual value is now recoverable. Enough, however, still subsists to show that here, as elsewhere, his mind presaged untrodden fields of science hereafter to be claimed as part of man's ever-enlarging dominion.

The words light, heat, flame, elementary fire—nay, even the sun—were used by the learned of the fifteenth century with a very imperfect notion of their distinct meaning, and formed, in truth, a wordy labyrinth within which disputants struggled, unable to find the clue of sound reason which should aid them to emerge from an atmosphere of metaphor and quibble. Occasionally a remark, such as "the heat of the sun makes wine," or "motus est causa caloris," seems to prefigure the discoveries of later ages; but they must be looked upon as specious analogies and relations between phenomena rather intuitive than proved, and which consequently remained sterile even in the minds of those by whom they were first enunciated. What clearness of intellect may have done for this universal investigator we have no means of ascertaining, and must, therefore, assume that he employed the word heat in the ordinary scholastic dialect of the time. The practical tendency of his mind to reduce everything to experiment is, however, obvious here as elsewhere in the few notes which we possess.

"Of force as a cause of fire:—If you beat a stout iron rod with frequent blows between an anvil and hammer upon the same spot, you will be able upon the spot so struck to light a match." This mere record of a phenomenon must not take rank as the discovery of the equivalent character of heat and motion; it is, however, a shadowing forth of the idea not without value. The dilation of bodies by heat had clearly occupied the artist's mind, who deduces from it the explanation of various phenomena.

" If we heat water which is turbid by reason of mud, it soon becomes clear; and this takes place because by heating the water it expands, in expanding it becomes rarefied, and being rarefied, can no longer support whatever bodies heavier than itself may be found in it." A lecturer of the present day would scarcely use different terms.

His remarks upon the radiation of heat are also curious, and drawn as usual from personal observation.

" A globe filled with cold water sends forth rays obtained from fire, which are hotter than that fire. A concave mirror, although cold, collects the rays of fire, and reflects them hotter than the fire. Let the experiment be made of heating a piece of copper, and of causing a flame to pass through a round hole equal in size and distance from the mirror to the heated copper. You will thus obtain two bodies equal in distance, varying in heat and in light, and you will find that the greater heat here will cause the mirror to reflect a heat more intense than the flame already mentioned."

A sketch in the " Codice Atlantico" would seem to indicate that Leonardo had given great attention to the subject of concave mirrors, and to chemical analysis by aid of these instruments; for we find exposed to the action of two mirrors a small plate marked by the artist with the word " diamante." Nevertheless it would be rash to conclude on the evidence of this sketch that Da Vinci had actually experimented on the rare and valued crystal of carbon, more especially inasmuch as we nowhere find any record of the results, or even any mention that the experiment was ever made. It is not unlikely that the word *diamante* may have been used by Da Vinci to express not the diamond, but the far commoner mineral known to ancient authors as *magnes*, in fact the loadstone. Writers of the middle ages used the words *magnes* and *adamas* indifferently, to which circumstance has been attributed the French name for the magnet,

aimant, a corrupted form of *adamas;* and it is by no means improbable that Leonardo may have exposed a loadstone to the action of the burning-glass.

At this period very little was known on the subject of magnetism. Classic writers had indeed recorded the singular property of attracting iron possessed by the stone named *magnes;* in the twelfth or thirteenth century, whether from that cradle of invention, China, or by independent discovery, European philosophers had become acquainted with the tendency of loadstone to turn to the pole. Its faculty of transmitting to steel the same power once discovered, the mariner's compass was complete. Thus far knowledge had advanced; but upon this small foundation of truth had been erected such a marvellous structure of fantastic and all but miraculous qualities, wholly devoid of experimental basis, that the true study of magnetic science can scarcely be considered to have begun. There did indeed exist one or more copies of a letter written in 1269 by Pietro Pélerin de Maricourt to a certain Siger de Fouquancourt, in which the principles of the doctrine of magnetism were laid down upon a truly scientific plan; but the letter was little known, and those who had read it unfortunately neglected the sounder and better based part of the work to chase the philosophic *ignis fatuus* of a perpetual motion to be maintained by magnetism. That the mysterious activity of the loadstone, a phenomenon so surprising as to have induced in many a belief that the mineral was actually endowed with life, should have remained unnoticed by Leonardo would indeed have been amazing; in this branch of science, however, his recorded observations are but few, and we find but little to cite beyond two memoranda of facts either wholly unknown or very carelessly noted by others. These are the power of magnetic force to act through intervening obstacles, and the reciprocity of attraction between the loadstone and the iron. Albertus Magnus, one of the highest scientific authorities in those

days, in his work on "Stones and Minerals" records with obvious wonder a fact which he had learnt from a friend, "a curious investigator and experimenter on new things," how that "the Emperor Frederick possessed a loadstone which did not attract iron; on the contrary, iron attracted it." Leonardo had noted down, "The lines of the loadstone and the iron pass through a wall, but that which is lighter is attracted by the heavier. If loadstone and iron be of equal weight, they attract with equal force."

In acoustics it might not unreasonably be expected that he should make progress; and whether it be that he really devoted more time to this branch of science, or that his notes have been more carefully preserved, certain it is that we possess distinct evidence of his prescience in a difficult and almost unexplored field.

So little experimental knowledge upon the laws of sound had at this period been accumulated, that while music had certainly made progress as an art, acoustics as a science had remained in pretty much the same position as it had been left by the semi-mythic Pythagoras. Leonardo, noted for his skill as a player on the lyre, as we learn from Vasari and other biographers, and master of Antonio Migliarotto, who accompanied him as a pupil to the courts both of Sforza and of Gonzaga, was little likely to content himself with the vague assertions as to sound which were adopted without examination by all writers in turn. The processes by which he reduced speculation to certainty have not been as yet fully made known; the conclusions, however simple they may appear to scholars of our own time, are such as denote the grasp of an intellect immeasurably superior to that of his contemporaries. We find him analyzing the phenomenon of echo, and deducing thence the law that sound requires a constant time in which to traverse a fixed space, by which means he calculates the distance of the spot which has given

birth to the thunder-clap. His own words are : " It is possible to know by the ear the distance of thunder, if we have first seen lightning, by analogy with the echo." In this instance, moreover, we are enabled to trace the progress of the thought towards completion, for after many observations relative to the echo, we find in the " Codice Atlantico" the sketch of a clock fitted with a lever to stop the action, and the following inscription :—" If the tops of the trees and the clouds be without movement, it will be easy by aid of this instrument to demonstrate the distance of the thunder." It is also clear from the condition of tranquillity which he postulates—if this mathematical term be allowed—that Leonardo considered the wind's action capable of affecting the velocity of sound, or at all events of modifying its intensity. Another acute observation relative to the distant action of vibratory movements is recorded with more than usual care by our artist: " A blow given to a bell corresponds with and will communicate motion to another and similar bell; and the string of a lute being struck will reply and give motion to a string of similar tone in another lute; and this can be rendered visible by placing a straw upon the string of the second lute." The researches of Galileo and other philosophers have made this fact the common property of all; but a century sooner the record had been hidden among the treasures of wisdom which Leonardo had amassed, but which he neglected to distribute.

Some other student of natural phenomena would appear to have originated the theory that the prolonged sound consequent on a blow was really produced by the ear of the hearer, and not by the bell itself; to which Leonardo replies in the following terms :—" Were this proposition based upon truth, we should by simply applying the palm of the hand be able to stop the sound; and particularly at the beginning of the force by which the actual tone is produced, it would be of no avail to touch the bell

with the hand, as the ear would store up the tone simultaneously; whereas we see that the blow being given and the hand applied to the object stricken, sound ceases at once." In the "Codice Trivulziano" we find Leonardo taking up the well-known experiment, which according to Nicomachus and Iamblichus, was tried by Pythagoras, and he raises the pertinent question:

"Is the sound in the hammer or in the anvil?

"I say: seeing that the anvil is not suspended, it cannot resound; but the hammer resounds from the leap which it makes after the blow; and were the anvil to resound . . . . just as a bell, no matter by what material it be struck, yields the same depth of tone, so would the anvil, struck by no matter what hammer. If therefore you hear various sounds from hammers of various sizes, the sound proceeds from the hammers and not from the anvil."

In this instance, however, we are not so far affected by what Macaulay has wittily designated as *lues biographica*, as to subscribe blindly to the decision of Leonardo. We see him here as elsewhere striving to bring dogma to the test of experiment; but the experiment is one far more complicated than he supposed, and the laws of harmony are far too complicated and seemingly self-contradictory to be condensed into the brief *ipse dixit* with which Da Vinci has passed judgment as to whether the anvil or the hammers gave forth the sounds in question.

But the principles of mathematics, their application to perspective and to optics, research into the laws governing the minute molecular actions which in turn give birth to light, heat, and magnetism, the more material changes by which are produced the phænomena of sound, all these sufficed not to the ever active spirit of Da Vinci, never content till a discovery had yielded some practical and useful fruit.

We have already learnt from Vasari that in his early youth

the artist had proposed to transport, by means of ingenious machinery, gigantic edifices, curiously anticipating the feats of transatlantic engineers, who treat huge hotels as merely pieces on the chessboard of newly-planned cities. One of the earliest proposals of Leonardo was to elevate the Baptistery of Florence, the "il mio bel San Giovanni," of Dante, upon a basement of granite, and the effect of such an achievement would probably have added much dignity to the building, although we may well rejoice that so cherished a monument was not trusted to the self-confidence of the young engineer. Excavation of new canals, draining of lakes and marshes, tunnelling of mountains, were the ordinary dreams of his youth. When, however, the calmer and sounder reasoning of mature age had replaced the unbridled self-confidence of early years, we find him no longer anxious to add new weapons to the arsenal of mechanical science, but employing, in order to establish the science of force and motion, the principles of experimental philosophy in which he had always delighted. In the study of mechanics, he is anxious to establish first principles; the ancient authors to whom, as to oracles, all the inquirers of that day were taught to look up, had given few and mysterious utterances, the modern none at all. Guided by these imperfect helps, Leonardo encountered the problem of the *vis inertiæ*, on which he conceives the whole fabric of the laws of motion to rest.

"No insensible thing can move of itself: its motion must be caused by others." What then are the "others" to whose action is due the motion of objects devoid of spontaneous mobility? He answers, "Force," which he proceeds to define as follows:—"Force is a power spiritual, incorporeal, and impalpable, which occurs for a short period in bodies which, from accidental violence, are out of their natural repose. I call it spiritual, because in it there is an invisible life; and incorporeal and impalpable, because the body in which it originates increases neither in form nor in weight."

Nevertheless our philosopher, observing, as he could not fail to do, that these insensible things had an invincible tendency at times to move of themselves when left entirely to themselves, and without any intervention from "others," elucidates yet more fully his doctrine: "Material motion is made by weight or by force. That which is made by weight sometimes generates force, and at other times another weight, and that made by force, acts in a similar manner."

It seems, then, that attraction or gravitation, under the title of weight, is rated by Leonardo among the causes of motion, although he distinguishes it from shock or impetus, to which, more especially, he confines the name of force. The relation existing between force and the uniform velocity generated in bodies upon which force has ceased to act, is represented by him in the following terms :—

"If a power move a body in a given time a given distance, the same power will move the whole body in half the time half the distance, and in twice the time twice the distance;" a phrase which would be more tersely rendered now-a-days by stating that the distance traversed by uniform motion is proportionate to the time.

Not, however, to dwell too long upon phrases which are apt to degenerate into beating the air, it is more satisfactory to behold him combating dogmas by reason; as, where the schoolmen having affirmed that bodies hurled or discharged were projected forward by the motion of the air behind them, Da Vinci controverts the assertion with the remark, "No object moved can ever be quicker than the velocity of the power which moves it." Free from the prejudices of authority, and fortified by observation and experiment, Leonardo, at the close of the fifteenth century, ventures to assert that "every action must of necessity be the result of motion," thus anticipating Galileo, and preluding the discovery of the necessarily equivalent relations

between the divers phænomena of nature. To this he subjoins: "Every body weighs in the line of its own motion;" the term weight being here considered equivalent to pressure.

Uniform movement is not, however, the only, nor indeed the most usual, condition of nature; the fall of heavy bodies does not occur with uniform velocity, and Leonardo, again in advance of Galileo, informs us that "a thing which descends freely in every grade of motion acquires a grade of velocity;" a well-chosen expression, which indicates the progressive nature of the action, and is not far from disclosing the law of falling bodies. Speaking of percussion, he employs the phrase, "Percussion is a force reduced into a short time," adding that "percussion exceeds, in similar time, all other natural powers." The mechanism used by Leonardo in studying the laws of the shock of bodies was the same employed in later ages by Borelli, Desaguliers, and other investigators of mechanical principles—that is, elastic balls suspended by two threads, and allowed to fall against each other from different heights. He is the first author that we find, since the time of Archimedes, occupying himself respecting the centre of gravity, and illustrating his doctrines by means of figures in various positions, either with or without burdens. Much of what we here record is so simple that it will perhaps appear ludicrous to claim credit for Da Vinci on such slender grounds. Such will not be the opinion of those who have found in works by learned men of far later date assertions of startling absurdity, supported by all the dignity of copper-plate illustrations, yet bearing obvious proof of having never been submitted to the simple test of actual experiment.

The fact that a body could be under the influence of more than one motive power at the same time was clearly perceptible to Leonardo, who thus opened the path to those who afterwards discovered the rules of compound motion. He analyzed with considerable accuracy the double action of weight and pressure,

owing to which a body presses upon and descends an inclined plane, and has reduced to rule the variations of gravity in a suspended body which is raised by a cord regulated according to the suspended weight; in other words, he calculated the proportion borne by the weight to the sine of the angle formed by the suspending cord with a vertical line. He made many experiments on the resistance of solids fixed at only one extremity, or supported on two points, and indicated the method of testing the resistance of bodies to traction or to pressure, employing, as we have previously noted, similar mechanical aids to those of our own days. As an instance of the cautious accuracy with which he secured, so to speak, the foundations before advancing a step in the solid road of discovery, it may be worth while, even at the risk of tediousness, to transcribe his instructions for conducting experiments upon breakage.

"A record as to how you should experiment upon the rule, how much weight a wire of iron will support, to which experience you will attain by this means. Attach an iron wire, two *braccia* (forty-six inches) long or thereby, in some strong place; to this fasten a basket, dish, or some similar article, into which a hopper shall pour through a small hole fine sand, and when this iron wire can sustain no more it will break; apply a spring in such guise that the hole in the hopper shall at once close up, so as no more sand may fall in the basket, the which will fall to the ground, being no more than half a finger's distance; note the weight when the wire broke; note, likewise, at what part of itself the wire broke, and renew this experiment many times, to satisfy yourself whether it breaks always at the same point.

"Afterwards take a wire, shorter than the first by one half, and note how much more weight this will support; then take one a fourth of the first length, and so bit by bit of various lengths, noting always the weight by which and the point where each breaks. And this experiment you should try with all metals,

woods, stones, cords, and all things which can be made fit to sustain weight. And make of each thing a general rule, and similarly make one of terrestrial supports, that is, such supports as have one extremity fixed in the ground or directed towards the ground."

To many persons the minute accuracy of these details will appear almost excessive, and a scientific observer of the present day would reasonably assume much of what is here detailed so cautiously to be merely axiomatic; but in the infancy of science such minuteness was indispensable; and the close personal observation of Leonardo was certainly not valueless in an age content to repose implicit faith in any dogma which bore a high-sounding name. The step-by-step progress of the artist contrasts favourably with the calmly enunciated dogmas of Aristotle, which, in virtue of the mighty name of their author, were to be held not merely independent of but superior to the test of actual experiment. Objects thrown from a height reach the ground in times proportionate to their weight: such was the doctrine of the Greek sage. Galileo requests the professors of the Pisan University to meet him at the well-known Leaning Tower. In their presence he lets fall a ten-pound weight and a one-pound; and, with the all but simultaneous sound of the fall yet vibrating in their ears, the professors unanimously declare Aristotle to be right and Galileo wrong. Truly the time was full ripe for truth to make way against dogma, and no blame can be ascribed to the teacher who in such an age made ample allowance—superfluously ample as it may seem to us—for the ignorance and prejudice of his pupils.

More remarkable still are the experiments made by Leonardo upon attrition, and the laws deduced by him therefrom. He measured the amount of weight needed to move bodies resting upon horizontal planes, and set in motion by threads passing over well-adjusted pulleys, and experimented on the angle of inclina-

tion necessary to be given to the plane in order that the bodies supported on it should begin to slide. By varying, as he has charged us to do, the circumstances of his experiments, he deduced various maxims which may well be put on record :—

" The friction of bodies is of as many different degrees as are the varieties of the lubricity of the bodies which are rubbed together.

" In those bodies of which the surfaces are smoothest, friction is easiest.

" In bodies of equal lubricity, the heavier body offers the greater resistance in its friction.

" Every body resists in friction with a power equal to one-fourth of its weight, the ground being level and the surfaces smooth.

" When a smooth obliquity disposes a smooth heavy body to pass on the line of motion by the fourth part of its weight, then the heavy body is of itself disposed to motion by descent.

" The friction of a body which has sides of different magnitude will be always equal, on whatever side it may rest, providing only that it do not adhere to (*non si ficchi sopra*) the plane with which it is in contact.

" The friction of a heavy body is of equal power if produced by circumvolution as when in a plane.

" There is yet a fourth class of friction . . . . that of the wheel of a car which moves upon the ground, which does not rub but touch, and may be said to be by nature a journeying with steps of infinite smallness or littleness."

Thus at a distance of two centuries before Amontons, and three before Coulomb, Leonardo recognized the fact that the resistance to attrition depends both upon the nature of the bodies, their condition, and their surfaces; he discerned that the smoothness of surface diminishes the attrition, and that resistance increases by the increased weight of bodies. He gives, it is true, but one measure for all cases of resistance, which may have

arisen from the conditions of his experiments being sufficiently varied, so that in those actually tested by him the differences of resistance were really very small. Certain it is that the relations between pressure and attrition were formulated by L'Amontons in 1699, by Bülfinger in 1727, and by Desaguliers in 1832, in the same manner as they had been done by Leonardo. It is truly surprising to find an intellect at so early a date investigating with such care the laws of inclination and gravity, proving that the resistance offered by the various sides of a parallelopiped depended not upon the size of the lower surface, if the pressure remained constant; tracing the laws of friction as applicable to pulleys or to wheels; never content to slacken in his

"generous heat,
Till captive Science yield her last retreat."

Atmospheric resistance to the motion of bodies had not escaped his penetration, nor was he ignorant that the moving body drew along with it part of the air. We may even see that he had seized the idea that air itself was ponderable, for even if a somewhat oracular phrase, "That heavy matter will be the lighter which occupies the most air," be rather referable to the density of bodies as compared with their volume (in which case, however, we might expect to see the word *spazio* instead of *aria*), yet there are various passages in his works in which he distinctly asserts not only that air has weight, but that it can be weighed out of its own element. It is not, however, clear that he had actually estimated the weight of the atmosphere. Another ingenious remark of his should not be overlooked, that, admitting the rotundity of the earth, "a man who walks goes faster with the head than with the feet," an undoubted logical fact, though of no very practical importance. We have continual evidence that his mind was at work upon the question of levers and of the forces which act either directly or obliquely on their extremities,

upon the laws of equilibrium as connected with pulleys, with the inclined plane, with the screw—indeed in mechanics even more than in any other branch of physics. We may again recur to verse, and ascribe to him the motto given by Johnson to Charles XII.

"'Think nothing done,' he cries, 'till nought remain.'"

Unfortunately many works in which he either did explain or intended to explain his many discoveries have not come down to our days; and although he himself quotes their titles, such as "The Book of Force" (which was but a continuation of his "Book of Motion"), his "Treatise on Percussion," his "Elementary Mechanics"—and his biographers give many other titles of his supposed compositions—it may be not unreasonably doubted whether many of these vanished treasures ever had a corporeal existence, or represented anything more than the unfulfilled intentions of an insatiable mind. This great defect of proof, and the lamentable disorder which is everywhere observable in the arrangement of Leonardo's scientific notes, have hitherto been injurious, and will probably continue to be so, to the reputation of their author as a scientific man, by rendering him responsible for opinions which he never held or had subsequently seen reason to repudiate. Let us again refer to a subject on which we have already cast a passing glance, the problem of perpetual motion, a will-o'-the-wisp that in those ages led astray the wits of many grave philosophers, and whose fantastic rays are not wholly devoid of attraction to some of the nineteenth century. It would be most unfair to Da Vinci were we to refer to certain notes on this subject which are still to be found in those of his manuscripts which have been already published, or which may yet be consulted in libraries. Leonardo, it must ever be borne in mind, wrote his notes for himself, not for others; and it thus frequently happened that he would put on paper questions,

suggestions, proposals of which he himself at a later date (yet perhaps long before others) recognized the strange or absurd character. If, then, he chanced to recollect the fact and the whereabouts of his former erroneous entry, he would turn to the page, and, as we often find, by a simple "falso" or an idiomatic "non è desso," record without any ceremony the judgment of his sounder reason. He would then note down, either on the same page or in some other of his numerous common-place books (if that modern phrase may be permitted), the amended conclusion to which sounder reason, based it may be on more extended experiments, had led him. By this method he accumulated little by little the definitive materials for the various treatises which he was ever hoping to set in order, but which seem in most instances to have been postponed till the coming of that night in which no man can work.

At times, however, it would occur that Leonardo, even after he had discovered an error and left record of an ascertained truth manifestly at variance with his previously stated opinion, omitted to annotate or to cancel the earlier statement; and thus it happened that the friar Luigi Maria Arconati, who in 1643 collected and transcribed Leonardo's work "On the Motion and Measurement of Waters," allowed to remain among the other matters a chapter, "How to make a Perpetual Motion by Water," the worthy monk probably deeming it the chief jewel in his author's literary crown. Cardinali, who compiled a collection of Italian authors who have written about the motion of water, included, possibly without examination, this chapter, which will be found in vol. x. p. 443 of his work, published at Bologna in the beginning of the present century.

It was probably in early youth that Leonardo published this unlucky chapter; that he had afterwards convinced himself of the impossibility of perpetual motion is beyond all doubt. In the "Codice Atlantico," against a sketch of one of the numerous

pieces of mechanism designed for this purpose, he has written the significant word "sofistico," an adjective applicable rather to the doctrine of perpetual motion than to the individual machine in question. But we are not left to the evidence of a single epithet to prove how thoroughly the artist's better judgment had abjured the errors of his youth, when in the same volume we read: "It is impossible that a descending weight can raise to the height from which it started a weight equal to itself, for any length of time. Be silent, therefore, thou who proposest by a counterpoise to draw water of a greater weight than the counterpoise which raises it. It is a fact that if you lift a thousand pounds to the height of one *braccio* (23 inches) its descent will raise about a hundred pounds of water to the height of nine *braccia* and not more, for the above reasons." And again he declares it "impossible to create by any instrument a movement of water from below to above, by means of the descent of which it shall be possible to raise a similar weight of water to the height from which it has descended." He therefore concludes this argument by offering to the seekers after perpetual motion the following sound advice: "The water which mounts to the place of the counterpoise which moves it, will never be equal in weight to the counterpoise. Therefore, the time which it takes you to raise the counterpoise, employ it in raising so much water, and so save the cost of the machinery."

In one of the manuscripts now existing at Paris we read: "No object set in motion by its own movement in falling will ever be sufficient to carry it back to its original height; therefore motion must cease. And if a body by moving another body produce force, that force accompanies the body so set in motion, and by so moving it, consumes itself, and when so consumed, the body which has been moved by it is not in condition to reproduce force. Therefore no object moved can have a long duration, because when causes fail so also do effects." Could we, therefore,

bring into one view all that Leonardo continued to inculcate down to his latest days, we should find him going back, as was his wont, to the subject, accumulating proof upon proof in favour of his new thesis, and sedulously clearing himself from all suspicion of being any longer under the influence of the fantastic dream of perpetual motion.

Mechanics are the link which connects pure science with the material wants of man, and Leonardo was little likely to interrupt at this precise point the chain of his studies. With him knowledge was valued not for itself only, but for its fruits, and his mind was of that practical order that would have received barren intellectual progress as a poor recompense for labour. The treasures which he had amassed were to be forthwith utilized, and by his labours as engineer and architect, both military and civil, by his skill as a practical mechanic, as a metal founder, even as a manager of court masks and festivals, he was able to conciliate the favour of princes while deserving the thanks of their people.

All who consult the map of Italy and contemplate the huge sweep of the Alps around the subjacent plains of Piedmont and Lombardy, who look farther and note how closely the central ridge of the Apennines presses upon Tuscany, will perceive that no science could be more immediately needed or would produce more rapidly valuable fruits than that of hydraulics. Da Vinci's clear insight taught him that hydraulics could not be applied with any security of success, with any guarantee against frightful dangers, unless the principles of hydrostatics were thoroughly comprehended. Accordingly, we find him eagerly searching out the general laws which govern fluids in a state of rest.

Hydrostatics in the fifteenth century were at the lowest ebb; few or none read the works of Hero or of Archimedes, and in their pages were contained the little all which ancient science had

bequeathed to future investigators. Leonardo may have studied Archimedes, and probably knew something of Hero of Alexandria as a designer of fountains acting by compressed air, and one who had clearly observed, though he had not utilized, the elasticity of steam. Faithful, however, to his invariable rule of consulting nature rather than books, he by his own observations compiled a treatise on hydrostatics far more complete than anything he could have inherited from classic authors, and of which we possess some fragments of great importance. Beginning by considering water in itself and independently of the vessels in which it may be contained, he recognized the attractive quality in its particles by which they tended to aggregate into spheres, and while designating it by the title of gravity, distinguished it clearly from the tendency to gravitate towards the earth. "The gravity of liquids," he tells us, "is twofold: that, namely, by which the whole mass tends towards the centre of the elements, and that which, tending towards the centre of the mass, creates the sphericity of water . . . . but of this latter quality I see no method by human intellect to give a clear explanation, other than by saying that even as the loadstone attracts the iron, so this virtue is a hidden property of which infinite numbers exist in nature." Molière long afterwards drew a hearty laugh from the keen wits at the court of Louis XIV. by making a pompous physician announce that opium produces sleep because it has a soporific virtue. Is poor Thomas Diafoirus so far wrong? or when his brother of the nineteenth century substitutes the word morphine for opium, has he greatly enlarged the sphere of our knowledge? In any case, none can fail to admire the honesty and modesty of Leonardo, who while striving, like the grand old heathen, to proceed "beyond the flaming ramparts of the world," pauses at once when he feels himself incompetent to assume the office of guide, and candidly avows that the paths in which he meets impassable obstacles are "infinite." The touching con-

fession of our own mighty Newton at once occurs, in which he looks longingly from the beach of the vast ocean of undiscovered truth.

Not only had Da Vinci, without any fantastic hypotheses, but by simple observation of facts, arrived at the comprehension of molecular attraction, but, observing the tendency of water drops to conjoin into larger spheres, he draws the conclusion that the rain-drops which reach the earth are probably larger than those which exist in the higher regions of the atmosphere, an observation which, reiterated in the next century and disregarded, was, however, ascertained to be a fact by the invention of pluviometers. Nor did the minor atmospheric influences by which this result might be affected escape his keen powers of reasoning.

The phenomena of capillary attraction, the passage of oil through the wick of a lamp, of the sap along the veins of the plant, had all been noted as subjects for inquiry; an ingenious balance had been constructed for the purpose of deciding "whether all the water which is in a perpendicular line over a hole made in the bottom of a vessel weighed upon the hole or not"—in fact, whether it did not also exercise lateral pressure. He perceived clearly that water became lighter and more thinned (*assotigliato*) by the action of heat, and must therefore occupy the higher level, and the principle of equality of pressure upon equal superficies, which Pascal enunciated a century and a-half later, and on which in our own days Bramah based his hydraulic press, was clearly present to the mind of Da Vinci. We pass briefly over the numerous keen observations which he makes respecting liquids of different densities, such as water and quicksilver, upon the action of siphons, a subject which bewildered many investigators of later years, and upon the elevation of water by centrifugal force.

Returning to his previous remarks on aerostatics, we find him recognizing the great compressibility and dilatation of air, and ex-

plaining thereby the flight of birds: "When force generates a motion more swift than the flight of the resisting air, the air becomes thereby condensed, as do feathers pressed and squeezed by the weight of a sleeper, and the object which has driven away the air receives by its resistance the power of rebounding like a ball struck against a wall."

It is then clear that his researches were not confined to the laws respecting liquids; those more recondite ones by which the gases are governed had not escaped his glance; and Leonardo, in thus laying down the bases of the science of equilibrium and motion in fluids, may justly claim to be a leader in that band which long afterwards counted among its ranks the names of Stevinus, Galileo, Torricelli, Pascal, Boyle, Bernouilli, and which is far from being yet closed.

Applying his science to practical ends, Leonardo at a comparatively early date formed a scheme for canals to irrigate various portions of Tuscany, and also a method for draining the marshes of Piombino. Afterwards, having taken service under Lodovico del Moro, he turned his attention to the canal of the Martesana, improved the locks, invented new angular lock-gates to replace the old-fashioned "saracinesche," and gave plans for new conduits, accompanied with accurate rules relative to the measurement and distribution of their waters. It is far beyond the scope of the present article to enter minutely into the details of these services, which may be found fully illustrated in the valuable work of Lombardini on "The Origin and Progress of Hydraulic Science in the Milanese and other parts of Italy." We will merely remark that in the last years of his life we find him still at work, designing a canal which should pass by Romorantin, but which does not appear to have ever been carried out. In many parts of the "Codice Atlantico" are calculations and notes on the best method of arranging excavators so as to obtain the greatest amount of work in the shortest space

of time; the *colmata* system of drainage, analogous to the polders of Holland, and the best method of boring artesian wells are also fully explained, showing clearly that the careful details of the contractor as well as the bold schemes of the engineer were to be found united in the brain of the painter of the Last Supper.

Of undoubted merit as a mechanician, in geometry at least equal to any of that age, and as a draughtsman unparalleled, it is no way surprising to find in Leonardo all the requisites of a good architect; and he did in truth, as evidence shows, construct and complete many edifices. Fortune, however, ever foe to his reputation, did not fail to indulge her caprice in this art, where, more than in any other, genius is at her mercy, and great powers have to wait for favourable occasions. Many of Da Vinci's works of which honourable record exists have entirely disappeared. Mention has already been made of his wish to lift up the Baptistery of Florence and plant it on a basemental flight of steps; in many parts of the "Codice Atlantico" exist plans drawn by himself relating to the Castle of Milan; here and there are found sketches of cupolas, perspectives of churches, internal decorations; but the "Codicetto Trivulziano" is especially rich in architectural drawings. Many of these appear to refer to the lantern of Milan Cathedral, for which the artist constructed several models, as we learn from official documents lately published by Girolamo Calvi. He built a bath for the Duchess of Milan, for her husband a noble range of stabling sufficient for a hundred and twenty-eight horses, and a mansion for the Duke's son-in-law, the celebrated captain, Sanseverino. It is probably to the last-mentioned work that many MS. notes and plans in the "Codice Atlantico" relate.

Ever anxiously on the search for useful knowledge, we find him in his travels noting down any novelties he met, whether in architectural forms or mechanical devices for building purposes;

and in the last days of his life his thoughts were occupied with the ideas of a monument to Gian Giacomo Trivulzio.

Although some of his biographers wish to establish Leonardo's reputation as a professional harpist, invited to the court of Lodovico il Moro to charm the ears of that prince, we are not inclined to this opinion. Not only do we know that on his visit to Milan he was accompanied by an excellent player on the lyre, —taught, it is true, by himself, one Antonio Migliarotti,—but it is abundantly clear that his powers as engineer, architect, painter, and sculptor, were those which led to his entering the service of Lodovico. In his well-known letter to Sforza, a composition which all must admit not to err on the side of reticence, no allusion is made to his musical proficiency, in which art therefore we may assume that he did not consider himself "equal to any other man, no matter whom." It is painful to observe how, in those troubled times, the ambition of the Regent and the danger threatening from Naples gave fearful prominence to thoughts of war, and caused the artist to place in the second rank of merit the faculties by which hereafter he was to charm the world. We have alluded to what modern ideas are compelled to stigmatize as the bad taste of his self-laudatory letter to Sforza, and it becomes therefore imperative to refer to an essay, published at Turin in 1841, in the second part of the "Treatise upon Civil and Military Architecture," by Francesco di Giorgio Martini. In this work, its author, Sig^{r}. Carlo Promis, has with equal learning and perspicuity undertaken a detailed examination of the promises contained in Leonardo's famous letter, and has satisfactorily exculpated its author from the charge of vainglorious boasting.

Enumerating the promises of the letter, and comparing them with the designs of warlike engines to be found in the "Codice Atlantico," he concludes that the actual inventions therein disclosed have fully equalled the undertakings of the writer. It is

to be regretted that a writer so careful and so competent had not extended his investigations to the manuscripts extant in Paris and London, as also to the "Codice Trivulziano," perhaps in this respect the richest of all. Leonardo's inventions with respect to fire-arms have been alluded to by Venturi, and were made the subject of special illustration by Captain Angelucci, a writer of our own time. From his researches we gather that Leonardo was among the earliest inventors of bombards, wall-pieces (*passavolanti*), and mortars, and laid down excellent rules as to founding and boring them. Living on the debateable ground of warfare, the period when modern artillery had not yet wholly superseded the engines of antiquity, the catapult, the balestra, the ram, the cross-bow, were objects of his attention, and were endowed by his skill with added force and increased facilities of action. Cannon with numerous barrels, such as the German engineers, with grim humour, denominated "Death's organs," and such as we have seen in our own day revived under the titles of Gatling and mitrailleuse, are to be found in the paper arsenals of Leonardo, together with some cannons with curved and even angular barrels, which it is difficult to believe have ever attained to actual metallic existence. More practically useful, though not till the lapse of centuries had brought them into use, were his suggestions as to conical projectiles, and his notes on rapidity of trajectory—one of which is worth citing, as showing the determination to grasp at truth amid the darkness prevailing in all minds on this yet complicated subject. "The projectile (*ballotta*) of a bombard traverses a mile in five times (*tempi*), of which times 1080 are needed to complete an hour. Now, as 5 will go 216 times into 1080, it follows that, by keeping up this motion, we get 216 miles in the hour. And a mile is 300 (probably an error for 3000) *braccia*, a *braccio* being the length from a man's shoulder to his hand." From this calculation it results that cannon-balls at that period attained a velocity of rather more than 110 metres in

HEAD OF A WARRIOR.

From a drawing in the Collection of John Malcolm of Poltalloch, Esq.

a second. To many these calculations may appear rude and almost childish; and it may be asked what purpose can be gained by recording results so unimportant when contrasted with the accuracy of modern investigation. Yet surely those who look with reverence upon the telescope of Galileo, still preserved in the Museum of Florence, will not treat with contempt the efforts of the greatest military engineer of a far distant age.

More immediately interesting may be the fact, distinctly discoverable from his memoranda, that he had clearly observed the uselessness of increasing the charge of powder in a gun without at the same time enlarging the size of each grain; failing which precaution much of the powder would be expelled without being ignited. At the same time he saw the imperative necessity of large charges, and makes a note that "the greater the mass of fire that can be ignited at one moment in a bombard, the greater the force with which the ball will be expelled." All details of military engineering, such as walls, parapets, bridges, towers, were familiar to him, and his works include a specially ingenious method for rapidly inundating ditches and underground passages, as likewise for emptying them with speed when needful. In short, he devoted to the arts of war all the energy which distinguished him in those of peace, though it may be fairly doubted whether his heart was in his work. To obtain favour of princes it was imperative to offer such services as they chose to accept; when their protection was once assured, we see how gladly his spirit turned towards the mild and beneficent works of peace. A significant passage corroborative of this opinion may be quoted from his "Treatise on Painting," in which, speaking of historical paintings, and therefore of battle-pieces, he instructs his pupil not to omit foreshortening." "In battles," says the master, "there occur of necessity infinite foreshortenings and crouchings of the actors in such scenes of discord, or rather let us say of brutal madness." Is it unreasonable to suppose that the un-

finished fresco of the Battle of Anghiari may have resulted not from sloth, not, as some have supposed, from the failure of the *intonaco*, not from any fear of competition with Michel-Angelo, but simply from the repugnance the artist felt to depicting scenes of blood and carnage?

Be this as it may; in 1502 Leonardo da Vinci was appointed chief military architect to the terrible Cæsar Borgia, Duke of Valentinois. Now, if ever, was the opportunity to fulfil the many promises made in the letter to Sforza, to embody the numerous imaginings with which his manuscripts teem. In the very next year we find him engaged in the arts of peace, the only ones in which his heart really delighted, and by the exercise of which he was to enrich the world, and attain for himself a never-dying glory.

Devoting his genius thenceforth to peaceful ends, Leonardo, ever intent on diminishing evils and increasing comforts, strove to introduce ameliorations in the humblest and most continually recurring events of daily life. Relinquishing, as did Galileo in a later age, the metaphysical search after first causes of phænomena, he was content if, by careful observation of these same phænomena, he might effect some improvement in arts, trades, or ordinary domestic economy. The immense number of these inventions, and in many cases their trivial character, forbid anything like a detailed enumeration of them; a glance at a few salient objects is all that can be afforded, assuring our readers, however, that those who consult his vast treasury of drawings will often recognize with surprise not unmingled with amusement some humble instrument of common use as having issued from the fertile brain of Leonardo. Affable to all, generous even to the verge of prodigality, his temperament recoiled from any jealous concealment of the truths which he discovered; the "mystery" of an art was to him an unmeaning term, or at least symbolized a veil which it was his triumph and joy to rend

asunder. In the "Codice Atlantico" are many sketches of a proportional compass with moveable centre, identical in form with that designed by Giusto Burgi in 1603, and still used by engineers. With this instrument, to which he gives the title of *seste di proporzionalità*, Leonardo gives instruction how to describe an ellipse. A lathe for turning ovals obtained for its inventor some praise even from his contemporaries, and far more from the geometers of our own days. A surgical probe with three longitudinal divisions, capable of being expanded by a screw, so as to dilate gradually the aperture of a wound, gained honourable distinction for a surgeon of the last century, who was afterwards accused of stealing the idea from the treasures of Pompeii, where it indubitably exists; Leonardo had long preceded the Frenchman, and certainly was not indebted to the old Greek or Roman. An ingenious hygrometer, based on the absorption of water by cotton wool as contrasted with wax, and an universal joint, formed on the same plan as that afterwards devised by Jerome Cardan, may be seen among his designs. But his attempts, if we can give them no higher title, to measure more accurately the division of time, are worthy of a somewhat more detailed notice. Desirous as he must have often been to obtain for scientific purposes a correct indicator of time, we are not surprised at the various fruitless efforts made by him to improve the imperfect escapement, hitherto the only one applied to the water-clocks or sand-glasses on which the philosophers of that day depended. The escapement then in use, through wanting the means to secure the isochronous regularity of its oscillations, was competent to govern the early clocks so far as to prevent their running down too swiftly; but nothing like astronomic accuracy had been attained. That Leonardo had thought much on this subject his sketches give ample evidence: unfortunately the manuscript notes which are so often valuable in explaining his intentions are in this case totally deficient; yet from the sketches

alone it is fair to assert that if the idea of a pendulum clock were not clearly present to his mind, the instrument he proposed to construct would have differed very slightly from it. That the pendulum as a motive power was not unknown to Leonardo is beyond doubt, as he proposes to employ a very heavy one for the purpose of keeping up a continuous motion, renewing from time to time the force which the oscillating weight communicates to the other parts of the machine. In describing this attempt he points clearly to the analogy between his proposed machine and the clockwork of the time, for alongside the figure he has written, "This counterpoise works above with its rod in a toothed wheel, similarly to the rod of a regulator (*tempo*) for clocks . . . . and never loses time." Further evidence might be adduced to show how closely Leonardo approached to Galileo's great discovery, but it is needless to pursue the subject farther. It is not probable that the conjecture of Leonardo was ever turned to actual use, nor will the existence of high thoughts buried in his disregarded manuscripts tend to rob the starry Florentine of one ray of glory, or invalidate the established fact that Christopher Huyghens, in 1657, first gave to the world a clock regulated by a pendulum. Nor need we strive to augment our artist's glory by pointing to the boats moved by wheels to be found among his sketches; the invention was by no means new, and what improvements he might have thought of when delineating them are unknown to us. Little wonder is it that the engineer of the Martesana and other canals should be found continually altering and improving the dredging machines of which he had such constant need, nor that the humble but useful services of the wheelbarrow, claimed by France as an invention of Blaise Pascal, should have been used by Da Vinci a hundred and fifty years earlier for the transport of stones, earth, and water; the vessel in the last instance being suspended by pullies, so as to avoid spilling the contents.

War being at all times, but especially in that age, a more imperious master than peace, it is not surprising to find Da Vinci exercising his ingenuity upon the problem how to move about unseen below the water; but although his diver, with glass eyes and a tube reaching to the surface, bears a strong family resemblance to his successor in the present day, the want of an air-pump, which no one had yet devised, must have offered insurmountable difficulty to any prolonged efforts at submarine engineering. Nor did any useful results attend his attempts at walking or sliding upon the surface of the water by the aid of broad wooden discs like snow shoes. Quitting for a moment the battle-field, he finds time to give us the artist's sketching-stool, with three feet folding in one; a spring to close doors; a porphyry muller to grind colours, worked either by hand or water; a roasting jack with descending weight and fan escapement (still most common in Italian kitchens), but gave preference to one moved by hot air; because, as he notes on the sketch, "This is the true way, seeing that, according as the fire be moderate or fierce, the roast will turn slow or fast." Before leaving the kitchen, he proceeds to fit the chimney with a revolving cowl, which, he suggests, may be closed at night, to prevent the entry of cold air. If there be those who feel the dignity of the artist injured by such lowly ministrations to daily comfort, they may be relieved by the curious discovery made by M. Delécluze in the volume marked B, which is among those unjustly retained at Paris after the restoration of the plunder of Buonaparte. More than three hundred years before Perkins showed the inhabitants of this city the steam gun in action, the idea had entered the mind of Leonardo da Vinci. This new class of weapon received, at the hands of its inventor, the sonorous title of Architronito, or Lord of Thunder, a name of which the pomposity and provinciality may provoke a smile, but which was really a concession on its inventor's part to the prejudices of his age. Conscious with

how jealous an eye anything was regarded that did not bear the venerable stamp of antiquity, this Tuscan Teucer determined to avail himself of the broad shield of a Syracusan Telamon, and announced his weapon as an old but forgotten invention of Archimedes. Here we have his description :—

"Architronito is a machine of fine copper, invented by Archimedes, and throws iron with great noise and fury, and is used after this fashion. Let the third part of the instrument be placed in a great quantity of ignited charcoal, and when it is thoroughly heated, tighten the screw . . . . which is on the top of the vase of water . . . . . and while tightening the screw above, unstop it (*i. e.* the vase) from below, and all the water will descend into the heated part of the instrument, and will there suddenly be converted into so much vapour as it will seem marvellous, and yet more to see the fury and hear the noise. This threw a ball which weighed a talent, six stadia."

Were it not absolutely certain that in none of the remaining works of Archimedes can any mention of the Architronito be found, we might be inclined to suppose that this was not really an invention of Leonardo, especially as he has given what painters term local colouring to his fiction, by his use of Greek weights and measures instead of Italian. But a passage in the "Codice Atlantico" informs us that the author intended to treat further of his Architronito in a work on practical hydraulics, the index or rather plan of which he had there noted down. In this plan we find a section headed "Of firing a bombard, by water in a bombard of heated iron;" no mention being made of Archimedes, nor of the new title previously employed. Indeed, the title itself, properly examined, might have saved Sig. Marco Antonio Costa the trouble of writing a long essay to prove Archimedes the real inventor; for the unwarranted combination of Greek and Latin in the word *architronito* sufficiently disproves its being composed by a Greek, who, had he meant to express

such an idea, would clearly have used the compound *archi-bronte.*

A whole volume had been written by Leonardo upon mills; several designs for which are still existing, and many more of hydraulic wheels both vertical and horizontal, Archimedean screws, turbines, and other machines for raising water. Sketches of windlasses, blocks, and cranes abound in his MSS.; machines for wire-drawing, plate-rolling, and file-cutting; drills, planes, saws for wood and stone, ribbon-looms, coining-presses, scissors for cutting a pile on cloth, spindles for silk and linen, silk-throwers; in fact, it is difficult to cite any of the mechanical arts which had escaped the attention of the artist, and few indeed are those in which he has not effected some notable amelioration.

It cannot be expected that a genius so restless, so divergent in its pursuits, should never err; and no doubt sometimes Leonardo wastes precious time in pursuit of scientific chimæras. Of these, we have already alluded to the perpetual motion as one which he himself soon rejected as fit only for the lunar limbo of Astolfo. Perhaps—for we cannot even now speak with certainty—we may dismiss to the same region the numerous schemes for winged men, aërial chairs, and flying ships, which crowd the pages of the "Codice Atlantico," testifying to the marvellous fecundity of the designer, to his unwillingness to accept defeat at the hands of Nature; but not so practically useful as the numerous humble implements of which we have just given a very incomplete list. Nor have we cause to regret that so keen an intellect should have been exercised upon the somewhat barren fields of air, remembering the remark of Bacon, "that if a proposition be wholly rejected, yet that negative is more pregnant of direction than an indefinite; as ashes are more generative than dust." The speculations of Leonardo upon aërostation bequeathed to us, moreover, the parachute; for that instrument, made known by Veranzio in the next century, and actually

employed by Garnerin in the eighteenth, was carefully figured in the "Codice Atlantico." Leonardo had, we are told, a great love for birds; and Vasari informs us that "often when passing by places where birds were sold, having paid the vendor what he asked, he would restore them their lost liberty, and let them fly in the air." It may be deemed, perhaps, unfair to analyze the motive of this act, and try to determine how much was due to tenderness of heart, how much to philosophic observation; but it is, at all events, pleasing to receive from his own evidence a remark as to his predestined connection with the feathered race :—

"As to writing so detailedly about the kite, it seems that it is my destiny; for among the earliest recollections of my infancy it appears to me that when I was in the cradle a kite came to me, and, opening my mouth with his tail, struck me several times with it on the inside of the lips." Encouraged therefore by this augury, Leonardo proceeded to his allotted task of striving to navigate the region of his airy monitor. But, true to his principles of personal experiment, he does not give himself to vain speculation, but, anatomizing the wings and pectoral muscles of birds, endeavours to ascertain whether from the corresponding parts in the human frame sufficient force may be obtained to support the weight of the body. To what conclusions he came we have no means of ascertaining; as usual, the records are tantalizing and fragmentary, but even from these fragments enough can be recovered to rescue the practical mechanician from the accusation of vague and profitless dreaming.

We have already referred to his invention of the parachute, and it may not be deemed superfluous to record this fact in the brief terms employed by the author, whose ideas were too thickly crowded to allow him to stuff them with horrid epithets and bombast circumstance :—

"If a man have a canopy (*padiglione*) with the orifices filled

up, twelve *braccia* broad and of the same height, he may throw himself from any great height without personal danger." To this is added a sketch showing a man suspended by four cords from the machine.

It was probably to Leonardo's experiments on aërostation that is due the story told by Vasari, and repeated by other biographers, that he, "having made a paste of some wax, used, while he walked, to fashion most delicate animals filled with wind, which by blowing into them he caused to float in the air; but when the wind failed they fell to the ground." The feats of Japanese jugglers, so common at the present day, deprive this story of that tinge of the marvellous which no doubt it possessed in the eyes of Vasari and his readers, and the ascent and descent of these most delicate monsters were no doubt due to the temperature of the air which they contained. All of credit that we can claim for our hero is the skilful manipulation by the ineffable left hand which could produce so thin a pellicle of wax.

The popular imagination is seldom satisfied with a quiet record of truth, and ever delights in the supernatural. It is not wonderful that the same spirit which assigned to Sertorius his fawn, to Gregory the Great and to Mahomed—strange coincidence—their respective doves, should have conferred on Leonardo the dignity of a spectral lion to attend his footsteps. If this fable be a mere development of the fact that he constructed an automaton lion which disgorged a shower of fleur-de-lis, it has, at least, a somewhat respectable parentage; but it is rather hard to find the declared foe of the Hermetic school rated as an alchemist, or as one who on insufficient data proclaimed new and fantastic theories. The following passage shows how little tolerant he was to those who allowed themselves to be led astray even by plausible and misleading phænomena. "They are lying interpreters of nature who affirm quicksilver to be the common seed of all metals, not remembering that nature varies the seed

according to the diversity of objects which she wishes to produce in the world."

Leonardo occupied himself in chemical labours of more immediate utility—in the distillation of perfumes, the purification of oil, the preparation of colours and varnishes, of acids for engraving on metal, in mixtures for fire-works, and—for war at that time ever claimed a share of the inventor's powers—in the composition of poisonous vapours to be directed against an enemy. Very many of his receipts are to be found in his manuscripts generally, and might perhaps repay the toil of a careful investigator. He improved the chemist's furnace and still, facilitating condensation by surrounding the condenser with a continually renewed stream of cold water. In this branch of physics, however, the most interesting of his observations are those relating to flame, which may be considered as the earliest steps in the theory which was completed by Lavoisier at the end of the eighteenth century.

His observations on this subject are here quoted :—

"Where flame cannot live, there breathing animals cannot. The light (*i. e.* the candle) creates a vacuum, and air rushes to relieve this vacuum. Elementary fire continually consumes the air by which it is partly nourished, and would find itself in contact with a vacuum if the surrounding air did not rush in to refill it. Smoke is generated in the middle of the flame of a candle. Flame arranges (*dispone*) first the matter by which it is nourished, and then nourishes itself thereon. Excessive wind destroys flame; a moderate one nourishes it." By surrounding a burning candle with a glass tube of convenient diameter and height, Leonardo observed the circulation of the air within, and observed, "Through this tube the light has to exhale and to feed itself; the exhalation passes through the middle of the tube, and the nutriment comes from the sides, surrounding the exhalations."

Chemical knowledge was of course essential to his labours in metallurgy, and the "Codice Trivulziano" is rich in instructions upon the founder's art. Leonardo, who in youth had profited by the lessons of Andrea del Verrocchio, an admirable artist in metal, was for a long time engaged in the construction of cannon; and no doubt benefited by his experience when, at a later date, he was engaged upon the casting of his colossal equestrian statue of Francesco Sforza, a work, alas! destined to remain incomplete at his death. For sixteen years, at such intervals as other and pressing calls permitted, had the artist worked upon the model, and we may well imagine the joy with which he was looking forward to the joyful labour of the casting, when the fall of Lodovico il Moro and the invasion of the French troops dashed his hopes to the ground. The model remained in Milan, and the general belief is, that it was wilfully destroyed by the Gascon cross-bowmen of the Most Christian King, worthy ancestors of the Republican soldiers, who, in a later century, used the figures in the Last Supper as targets for their bullets. The great size of the model may have wearied out the powers of mischief directed against it; possibly, as Govi has suggested, the rider may have offered a more tempting mark for the Gascon bolts, and the horse remained comparatively uninjured: certain it is that, in the month of September, Ercole I. of Este wrote to his representative resident in Milan, desiring him to request from the Cardinal di Rohan the gift of "the model of a horse which he recollected to have seen in Milan, and which Sig. Lodovico proposed to have had cast," adding that "the model was perishing day by day, as no care was taken of it." Had this request been acceded to, the world might yet be enriched by the possession of this sculpture, so highly praised by contemporary writers. But the ordinary ill-fate of Leonardo prevailed; the Cardinal, ashamed perhaps of the condition to which neglect and ignorance had reduced the model, found official reasons for

delaying to comply with the Duke's request, and no more is heard of Leonardo's colossus.

A passage in the "Divina Proporzione" of Pacioli, has led to the supposition that this great work had been not merely complete in the model, but actually cast in bronze by its great author, the weight being given as 200,000 lbs.; but a careful examination of the index to the work of Fra Luca, in the edition of 1509, militates against this theory, the phrase clearly referring to its estimated weight "when it shall be cast." Nothing now remains of the sixteen years' task of Leonardo except a small red sketch in the "Codice Atlantico," representing the horse inclosed in a stout wooden cage, being most probably the appearance it bore when exhibited on the summit of a triumphal arch, at the marriage festival of Bianca Sforza and the Emperor Maximilian. A still smaller sketch in black chalk, nearly obliterated, shows the horse unencumbered by scaffolding. Although the reader may possibly think that enough has been said on the question of the casting, we cannot refrain from drawing attention to a semicircular row of dots upon the shoulder and ribs of the horse (in the red sketch), which the careful artist informs us are "all the heads of the large nails," and which seem to indicate a casting, perhaps only partial, of some of the model.

It is satisfactory when the inquirer, tired of speculating on doubtful phrases, or weighing conflicting testimonies, can record one of the few undisputed facts in the life of this artist; and no one, so far as we are aware, has doubted the truth of Vasari's statement, that Giovan Francesco Rustici availed himself constantly of the aid of his friend and teacher, Leonardo, in the completion of the three bronze statues still remaining above the northern door of the Florentine Baptistery. It is probable, therefore, that in these figures we possess evidence of Leonardo's skill in the technical branch of his art.

This essay would be incomplete if some notice were not taken

of the academy established under the auspices of Lodovico il Moro, of which Leonardo was president, and for the use of which it is probable that many of his scientific and artistic treatises were intended. Nothing now remains recorded as to the proceedings of this body, whose very existence might have passed from memory but for the existence of the six curiously interlaced labyrinths engraved on copper, and bearing in their centres the inscription "ACHADEMIA LEONARDI VI(N)CI," concerning the authorship of which so much question has been raised. Certain it is that these identical patterns were cut in wood by Albrecht Dürer, and appear with his well-known monogram, occupying the place of the Italian inscription. Into the question of priority it is needless to enter, any more than to speculate whether Dürer's horse of the Knight in the well-known engraving must necessarily, because of its similarity of attitude, be an offspring of the horse of Sforza. Far better surely to follow the advice of a wise critic of our own days, and believe that there are in nature fountains large and small, and that it is not necessary to derive every streamlet we find in the world from a perforation in some other man's tank.

Did Leonardo ever actually handle the engraver's burin? As usual, the matter is in doubt, and all that can be done is to reconcile the silence of his earliest biographers with the improbability that he who tried everything should have left untried an art so likely to have tempted his fancy. If he did, the evidence dwindles, with even more than the usual minuteness, to a single engraving—a female head—of which an unique impression exists in the British Museum. The features certainly bear much resemblance to those of Mona Lisa; and most critics will feel inclined to adhere to the opinion of the Marquis Girolamo d'Adda, as published in the "Gazette des Beaux-Arts," vol. xxv.

"All tends to assure us," says M. d'Adda, "that we have

before our eyes a true production of Leonardo, even the evident inexperience in the handling of the burin, the marks of which escape in places beyond the line of tracery. The firmness of the contours, the costume, the head-dress, and, above all, the forcible expression of the physiognomy, betray the handiwork of a master."

We have yet to look upon Leonardo in another and perhaps less dignified character, that, namely, of deviser and manager of court festivals. The masks and pageants of those days were far more complicated, gorgeous, and picturesque than the festivities of a century which does not aspire to anything more poetic than a state ball, or at best an Eglinton tournament; and when we remember that, even in the colder clime of England, Inigo Jones and Ben Jonson combined their powers for the amusement of so unpoetical a prince as James I., it will not seem undignified for Leonardo to undertake works now more properly relegated to the scene-painter and stage-carpenter. Such, at all events, was the custom of the age; and mighty minds were condemned to waste their powers in ministering to the ephemeral pageantry of a court. Fra Luca Pacioli, in his work, "De Viribus Quantitatis," has given an exuberant description of the numerous festivities which, at the court of Lodovico, were almost incessant, and which were under the special guidance of Da Vinci.

The magnificence of these festivals in some degree excuses the misdirection of genius compelled to labour on such ephemeral objects; and a list of some of the principal pageants over which Leonardo presided may be laid before our readers. In 1489 the marriage of Gian Galeazzo with Isabella of Arragon required his services; then that of Sanseverino with the daughter of the Regent; subsequently that of Il Moro, himself, with Beatrice d'Este. Probably the triumph of Louis XII. of France, in 1507 or 1509, was ordered by him, and without doubt that of Francis I. in 1535.

It appears somewhat startling to find the same hand which directed the splendid pageants of Il Moro so soon afterwards engaged in similar services for Louis XII. and Francis I.; but Leonardo, however his memory may be now reverenced by Italy, had not much cause during his life to be grateful to her rulers. Lodovico Sforza left him almost destitute of the necessaries of life; Pier Soderini went nigh to calling him a cheat on the question of discontinuing his painting in the Palazzo Vecchio at Florence; Leo X. openly expressed a contemptuous opinion of his talents on no better grounds than that of his cautious preparations for work, and showed no wish to engage his services at Rome. Louis XII., and subsequently Francis I., gave him important commissions, and were liberal in their treatment of the slighted artist; Chaumont, the king's lieutenant, wrote to the Signory of Florence respecting him in terms of well-merited praise, and the noble asylum offered by the French monarch for his honoured age, was such as he could never have hoped for in his own country. Many circumstances, indeed, show that Leonardo had not experienced much of happiness in Italy. Occasional remarks such as the following seem wrung from the depths of a disappointed mind:—"Do not teach, and by that alone you will be valued. Live simply, and wear home-made clothes."

Moreover the church, then a powerful agent, was not, and never could be, a friend of Leonardo. Although the old man left, as we have seen, special and minute directions in his will that all honour should be paid to the ecclesiastical arrangements of his funeral,—much as the dying Socrates ordered the sacrifice of a cock to Æsculapius—the remarks of Vasari, even when modified in his second edition, are not such as can be applied to a steady churchman. Indeed, we have our artist's own testimony that he had incurred severe blame for two serious offences in priestly eyes—"working at his art on feast-days, and investi-

gating the works of God." On these two charges we are content to accept a verdict of guilty. That of immodesty, also preferred from the same quarter against the painter of the Last Supper, requires, perhaps, a passing notice. It is not difficult to comprehend that, to a certain class of minds, such as begged for draperies to be added to the stern outlines of Michael Angelo's Last Judgment—such as in our own day shrank from contemplating Canova's Genius of Death on the Rezzonico monument, mutilated the weeping youths on the tomb of the last Stuarts, and even (*risum teneatis, amici*) clad in bronze garments the beautiful infants by Ammanati in the church of S. Pietro in Montorio,—to these, no doubt, the bold and careful anatomic studies of Leonardo would appear but as glaring evidences of impurity. The eye sees, it has been said, in all things but what it brings the faculty of seeing; and the painter's old foes, the "Farisei," would, doubtless, be blind to the graceful and pure sketches which are to be found crowding his portfolios, to the fresh breezy bits of woodland, the simple peasant girls, the vigorous and accurate heads of animals which, abounding everywhere and frequently trespassing on and overlaying scaffolds, bombards and cog-wheels, are the obvious outpourings of a mind too full of the beauties and wonders of nature to leave room for such thoughts as defiled the breasts of his accusers.

Looking back upon the figure we have attempted to draw of the great painter, in his less known and less popularly attractive character of scientific and mechanic teacher, we are constrained to admit that the outlines are in many parts obscured by the mists of time, and may seem to have been supplied rather by conjecture than by evidence. Should such prove to be the case, it may be pleaded in excuse that there was probably never a man concerning whose universal excellences testimony is so concordant, even though actual and visible proof of them is unusually deficient. One of his latest biographers, intent on collecting what know-

ledge might be gathered from the archives of the artist's native town, brings back the latest proof of the universal tendency to ascribe practical improvements to the all-knowing Leonardo, in the fact that the peasants of Vinci stoutly maintain a peculiar construction of the terrace walls by which the earth on the hill-sides is supported to have been devised by their great townsman.

Much of this feeling is doubtless based upon uncertain foundations. Solon, Lycurgus, Numa, even our own Alfred, are not wholly historic personages, and the catalogue of their good deeds represents in part the tendency of a grateful people to ascribe the blessings they have received to the beneficence of some traditional leader of men. Such widely-spread beliefs are entitled to respect, and command credence even when unsupported by absolutely certain proof. Even documentary evidence is often fallacious; and it may be that Signor Gilberto Govi, to whose enthusiastic researches we have been largely indebted, has, in his treatise "Il Genio di Leonardo," pushed conclusions somewhat farther than the citations from his hero's works wholly warrant. We conscientiously can assert that he has not advanced a single proposition without apparently good grounds, and in most instances certain proof is unattainable. These Sibylline leaves have been the sport of more than common tempests, their juxtaposition requires no ordinary skill, and the task of systematizing the enormous mass of his papers scattered throughout the various countries of Europe, never has been, and perhaps never will be completed. The scanty crop hitherto reaped from so ample a field results, no doubt, from the unfortunate habit of delay, which appears everywhere as the shadow accompanying the brilliant forms which his energy created, and which left his intended classification of his MSS. unaccomplished, "till lo! the little touch, and youth was gone."

A few—far too few—mighty works still surviving while many are known to have perished, a bewildering mass of plans,

sketches, maps, and manuscript notes, testifying to the all-embracing, over-discursive intellect of their author; such is the monument of Leonardo's life. After all, truth surpasses fiction; and all the array of qualities, to which Juvenal in bitter mockery represents his hungry Greek as laying claim,

> "Grammaticus, rhetor, geometres, pictor, aliptes,
> Augur, schœnobates, medicus, magus: omnia novit,"—

can, with more than common accuracy, be maintained as belonging, in simple truth, to Leonardo da Vinci.

C. C. B.

APPENDIX.

THE DEATH-BED OF LEONARDO.

THE TOMB OF LEONARDO.

THE MANUSCRIPTS OF LEONARDO.

LETTERS OF LEONARDO. *In the original Italian.*

THE TESTAMENT OF LEONARDO. *In Italian.*

CHRONOLOGY OF THE LIFE OF LEONARDO.

GENEALOGICAL TABLE OF THE FAMILY OF DA VINCI.

THE DEATH-BED OF LEONARDO.

IN his "Histoire de Léonard de Vinci," M. Houssaye has given the following account of the great artist's death-bed, in order to prove that Vasari's account of his dying in the arms of the king may be credited without doubt.

Leonardo da Vinci died on the 2nd of May, 1519, at his country house at Clos Lucé, nine days after making his will. It is not known whether the epitaph quoted by Vasari was written by a Frenchman or an Italian, or indeed if the composition be Latin of the sixteenth century. The greater part of the epitaphs of that time, if not all, were written in French. It may be fairly doubted whether the epitaph in question were ever inscribed either in the church or in the cloister of St. Florentin.

LEONARDUS VINCIUS! QUID PLURA? DIVINUM INGENIUM
DIVINA MANUS
EMORI IN SINU REGIO MERUERE.
VIRTUS ET FORTUNA HOC MONUMENTUM CONTINGERE GRAVISS.
IMPENSIS CURAVERUNT.

ET GENTEM ET PATRIAM NOSCIS : TIBI GLORIA ET INGENS
NOTA EST ; HAC TEGITUR NAM LEONARDUS HUMO.
PERSPICUAS PICTURAE UMBRAS, OLEOQUE COLORES
ILLIUS ANTE ALIOS DOCTA MANUS POSUIT.
IMPRIMERE ILLE HOMINUM, DIVUM QUOQUE CORPORA IN AERE,
ET PICTIS ANIMAM FINGERE NOVIT EQUIS.

Leonardo da Vinci! What more can be said? His divine genius, his divine hand, deserved to die in the arms of a king.

Virtue and fortune have united their resources to erect this monument to him at great expense.

Thou knowest both his family and country; his immense glory also is well known to thee: for with this earth is Leonardo covered.

His skilled hand, better than others, represented in oil the colours and clear shades of painting. In bronze[1] *he knew how to mould the bodies of men and of gods; and to give life to pictures of horses.*

Melzi, partly through sorrow and partly through anxiety to fulfil the last wishes of his patron concerning the funeral, which was not to take place until four days after his death, deferred for nearly a month writing to the brothers of Leonardo; he was left executor to the will, and without doubt found a difficulty in settling between Salaï and Villanis, who, as we are aware, carried into Italy a large part of the drawings and sketches of their master. Besides, Melzi would do nothing without the permission of Francis the First. Historians who, like Stendhal, have spoken of his journey to Saint-Germain, should have remembered that his object was not to communicate the death of Leonardo, since the king was present when he breathed his last, but only to show him Leonardo's will, and to receive his orders concerning the unfinished works of the *Painter to the King.*

Here we have the letter of Melzi to the brothers of Leonardo da Vinci:—

Amboise, the first day of June 1519.

"To the Lord Julian and other honourable brothers of Leonardo.

"I believe you are aware of the death of Master Leonardo your brother, who had always for me the tenderness of the kindest

[1] We must crave M. Houssaye's pardon for a somewhat different rendering of the epitaph, but neither construction nor prosody will allow *aere* to be derived from *aer*. "Divum corpora in aere" must not be translated as "les dieux, habitans de l'air." Aere is clearly the ablative of *aes*.

father. It would be impossible for me to express the sorrow which this wretched event has caused me; all that I can tell you is that as long as my body contains a spark of life, so long shall I suffer a killing grief, as I ought to do, for Leonardo never let a single day pass without giving me some proof of his great affection. So rare a man—for nature can never produce another such—must be universally regretted. May it please Almighty God to allow him an eternal rest. He died on the 2nd of May, well prepared to receive the sacraments of the Church.

"Leonardo had received a letter from the Most Christian King, permitting him to make a will, and to leave his worldly goods to whomsoever he wished, *exempto quod hæredes supplicantis sint regnicolæ;* which thing he would not have been able to do without this letter, having received it from the bounty of Francis the First. All his wealth which he possessed in France would have been lost to him, for such is the custom of this country. Master Leonardo thus made his will, which I would have sent to you had I been able to entrust it to a safe person. I am expecting one of my uncles who is coming to see me, and who will return hence to Milan: I will place it in his hands, and in this way it will be faithfully remitted to you. Up to this time I have found no means of forwarding it to you.

"Here is all that is contained in the will concerning you:

"'Master Leonardo possesses at Santa Maria Novella, in the hands of the chamberlain, in bills, four hundred scudi, at five per cent., and that for six years completed next first of October; he also possesses a property at Fiesole which he divides in equal portions among his brothers.' His will does not contain any other disposition concerning you.

"I will say no more except that I offer you all that I am worth and able to give: you will always find me ready and willing to second your wishes. I recommend myself to you always. Send me an answer by the Gondi as your brother.

"FRANCESCO MELZI."

Francis I. no doubt detained Melzi, for he does not speak of his own return into Italy, where Vasari afterwards found him, an old white-haired man.

History does not concern itself much with the life of Villanis. According to Lanzi, Salaï had profited from the lessons and sketches of his master. On his return into Italy he sold many pictures of Leonardo da Vinci, finishing his unfinished works, copying some of the heads with the Master's secret, but lacking that expression of soul which shines out in all the works of the great painter.[1]

Some historians contend that Leonardo da Vinci died at Fontainebleau, whither the court seldom went but on hunting days. It may be that Leonardo never even saw Fontainebleau, for he makes no mention of it in his manuscripts: it is certain that there are no traces of him left at Fontainebleau, either in works of art or in the archives of city or castle.

Louis XI. inhabited his palace, ornamented with gibbets and iron cages, at Plessis-les-Tours; Charles VIII. cared for nothing but his château at Amboise, of which he had made a museum; and Louis XII., during his times of peace, would only live on the borders of the Loire.

Those who believe that Leonardo da Vinci went to Fontainebleau and died there might have known that at that time Fontainebleau was nothing but a hunting palace, Francis not

[1] "With regard to filial affection, Salaï was the precursor of Melzi; he followed his master to Florence, after the downfall of Lodovico Sforza; from thence to Rome after the expulsion of the French from Lombardy, and finally to France. He was especially entrusted with the direction of his domestic affairs, which explains the reason of his being called the pupil and servant of Leonardo, a phrase which should not be taken in too literal a sense, as though his duties towards him had been merely those of a hireling. The features and expression of Salaï had also a delicacy which might suggest a type of angelic beauty, and it is sometimes in that character that he appears in the sacred pictures of his master."—Rio.

having yet had the idea of converting it into a gallery of fine art. It was not until after the death of Leonardo da Vinci that Andrea del Sarto was summoned—not for the castle, for that was not rebuilt until twenty years after—but for the chapel of Saint Saturnin. Here is an extract from a letter of the king, dated December, 1529:—

"To add to, enlarge and amplify the building we are at present causing to be constructed and erected in our castle and residence of Fontainebleau, in the forest of Bière, and to embellish and decorate it with ground, garden, and such necessary enclosures as belong to it, Be it known that we have intention and are determined hereafter to make it for the most part our residence, both for the pleasure we take in the said place, and also for the sports in the chase of red and black game which live in the forest of Bière and its environs: therefore we have arranged to take and recover from our dear and well-beloved priests and friars of the order of the Holy Trinity, at present living in the said place of Fontainebleau, the half of the place where at present is situated the great gallery, leading from the said castle into their church and dwellings in the abbey, their garden and large enclosure of fields, the place where at present our stables stand, together with their pools and fish-ponds, the house of the chaplain which was once in the said castle, and seventeen houses of inhabitants in the said place which are contiguous to and adjoining our said castle."

In 1528, as an historian has very justly remarked, space was needful for the plan of Francis I., but in 1530 artists were wanting to fill the space. It was only eleven years after the death of Leonardo da Vinci that "Il Rosso" led into France a colony of painters and sculptors. Among the painters we may remark a certain Leonardi, a Fleming, who had studied in Italy: and it is highly probable that many writers have confounded the Flemish Leonardi with Leonardo da Vinci.

Moreover, it was not likely that Leonardo da Vinci, who had made his will at Amboise nine days before his death, should have travelled in a dying state from Amboise to Fontainebleau. It was not he who went to the king, it was the king who came to him.

All the writers, even M. Charles Blanc, in his fine essay on the painter of the "Last Supper," are in error on a question of date, for they have all imagined that the will was made in 1518, and that Leonardo did not die until 1519; but it should be remembered that in the time of Francis I. the year began at Easter, and not at the Feast of the Circumcision. Now the will of Leonardo was dated the 22nd of April, 1518, before Easter, and death claimed him on the 2nd of May, 1519, after Easter, so that these two dates are only separated by a distance of nine days.

Among those writers who affirm that Leonardo died at Fontainebleau, M. Vatout,[1] the historian of the royal residences, stands out prominently. The strongest argument the intelligent chronicler can bring forward is that the registers of burial at Amboise do not contain the name of Leonardo da Vinci in

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[1] "The love of the arts which Francis I. had brought back from Italy was much more agreeable to the French nation than religious bickerings, and they hailed with delight the prospect of transforming the old manor house of Fontainebleau into a royal museum of arts, where Italian painters displayed to their astonished eyes the marvels of their poetic taste. Of this number Leonardo da Vinci made one, a point on which we are certain, as there is in the city of Amboise a little country house still shown to visitors, and called the 'Château de Cloux.' Millin, in his 'Voyages du Midi,' considers that it was there that this great painter died, and not at Fontainebleau in the arms of the king; he adds that it was Melzi who carried the news to Francis I., then staying at Saint-Germain-en-Laye. We, who in our book on Fontainebleau have adopted the contrary opinion according to the belief of Le Père Dan and Félibien, cannot help observing that had Leonardo died at Amboise, there would have been, in default of a tablet in the church of St. Florentin, at least his name inscribed on the burial register of the church."—VATOUT.

May, 1519. M. Vatout, who has hunted at Amboise, never gave himself the trouble to devote an hour or two to its archives,[1] or he might have assured himself that as the registers of burials do not begin until 1532, it would have been impossible to find there the name of Leonardo.

Down to the end of the eighteenth century Leonardo da Vinci was always believed to have died in the arms of Francis I., some say at Fontainebleau, others at Amboise; but there is no reason for doubting that it was at the latter place. It must be, however, interesting to determine whether the oft-told tale, equally glorious to the monarch and the artist, is merely a poetic legend or an historic fact.

Without speaking of the author of the epitaph to be found at page 183, let us pass in review the various authorities, beginning with Vasari, whose version of the story is as follows :—

" As he was an aged man, he remained sick for many months. Feeling his end to be near, he gave his thoughts entirely to the truths of our good and Holy Catholic religion. Full of sorrow for his sins, he confessed himself with humility, and preparing to receive the holy sacrament with devotion, he arose from his bed; he was unable to stand, but his servants and friends supported him. The king, who often visited him as a friend, arrived just then. Leonardo, full of respect for the prince, then placed himself on his bed, and giving him the story of his illness, asked pardon of God and man for not having done all that he might have done for art.

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[1] I have searched through the archives of Amboise. The name of Leonardo is not to be found there at all; but this unspoken denial proves nothing: Leonardo lived five years at Amboise, and no more is said of his life than of his death. The archives of the castle have all been dispersed in different directions, with the exception of a few registers of baptisms, marriages, and burials, which unfortunately date only from the middle of the sixteenth century.

"Suddenly he was seized with a paroxysm of pain, a forerunner of his rapidly approaching end. The king rose and held his head to alleviate his suffering; but as though this divine artist felt he could hope no greater honour on this earth, he expired in the arms of the king."

From whom could Vasari have heard of this sad and touching scene if not from Melzi, who had not left his friend for a moment, and who no doubt kept the memory of the master's last hour all his life?

Although critics, with their usual superficial observations, have scoffed at Vasari's version, comparing it to the moral at the end of a fable, they might yet have known, by reading Vasari's works, that he was well acquainted with Melzi after the latter's return from France. Vasari himself says so in an essay on Leonardo:—

"The greater part of the anatomical drawings in the portfolios of Leonardo da Vinci belong to Messer Francesco da Melzo, a Milanese gentleman, a handsome and agreeable old man (*bello e gentil vecchio*), who in Leonardo's time was a beautiful and gracious lad."

But why, we think we hear these sceptics say, did Melzi not say a word on this oft-contradicted subject in his celebrated letter to the brothers of Leonardo da Vinci? Is not that letter a document which should over-rule all, even the last will and testament? We answer that Melzi in his letter does not inform the brothers of Leonardo of the death of his illustrious master: "I believe," says he, "you are informed of the death of Maestro Leonardo."

And when, later on, Melzi speaks of "this rare man universally regretted," he does not consider that the regrets were confined to Amboise or even to Paris; he believes that the intelligence of this death, then unexpected, had penetrated as far as Milan, Florence and Rome. It is not known whether the news of the

death was not first intimated to the brothers of Leonardo by Villanis, Salaï, or even by the hand of Francis I. himself.

There are some, who, considering the legend too poetic and too pompous, affirm that, had Leonardo died in the arms of Francis I., Melzi would not have omitted to say so, as he does not omit to mention the date and the state of mind of his illustrious master. It is possible that Melzi did not wish to speak but of the King of kings: "Leonardo departed this present life on the second of May, well prepared to receive the sacraments of the church."

Melzi perhaps did not wish to intermingle worldly things with spiritual ones. But in his conversations with Vasari, it was he, there is no doubt about it, who reported the last moments of his illustrious master. The well-known epitaph attests the truth of the story: "His divine genius, his divine hand, deserved to die in the arms of a king."

In the time of Poussin, M. de Chambray, the French translator of the "Trattato della Pittura" of Leonardo, relates very much like Vasari the death of the painter of the "Last Supper:"—

"He was accommodated, by the king's command, in the palace of Cloux at Amboise. From 1516 until the year 1519 history does not mention any of his works in painting. The court at that time resided frequently at Amboise, and the king deigned to visit him several times. At last, one day when the prince was with him, Leonardo, weakened by the sufferings of a long illness, tried to gather together his remaining strength to sit up in his bed, and bending forward to express his gratitude to the king, he suddenly lost the power of speech and expired in the arms of Francis I., who was sustaining him. Such was the glorious ending of all that was perishable in this great man. The last sigh of the creator of fine art in Italy was gathered up into a royal breast. The sorrow felt by the king shed a halo

round the funeral obsequies, and presaged, so to say, the apotheosis of Leonardo da Vinci."

Félibien, who was able to write on the subject when it was still recent, and De Piles, who possessed the most precious documents concerning French art, have both recalled the scene which Vasari described with so much accuracy. Here is the version of Félibien :—

"The esteem in which the king held this wise man was seen by the welcome which he gave him on his arrival and by the kindnesses Leonardo acknowledges to have received from the monarch during the short time of which he was able to write. I believe you have heard that the king having been to visit him during his illness, he wished to half raise himself in his bed, and that, desiring to express to the king his deep feeling of the honour His Majesty did him, he failed in his speech and expired in the arms of the king."

In Germany the story is alternately cavilled at and supported. Gallenberg does not believe in it, but Schlegel has no doubt of its truth :—

"Quickly, as though hastening to a father, the king flies to the sick man's chamber, and the failing eye of Leonardo sees him come. He bends forward to meet him, he wishes to show honour to his young friend, whose arms, whose hands enclose him in an affectionate embrace. His face, already as pale as that of a corpse, attempts a smile, the welcome expires on his lips, and his breathing dies away. The king long waits in silence, uncertain whether he will not wake."

It is true that in Italy, Lomazzo does not speak of this, no more does Carlo Amoretti,[1] but both look upon the letter of

[1] Ludovico Dolce, in his "Dialogo della Pittura," says: "Leonardo Vinci, a great painter, was largely rewarded and infinitely honoured by Philip, Duke of Milan, and by the most liberal Francis, King of France, in the arms of whom he died, aged many years."

Melzi as the authentic record of the death of Leonardo da Vinci. Stendhal, on the contrary, took Lomazzo as his guide, who affirmed that the king was not present, for he (Stendhal) tells us, "When Melzi arrived at Saint-Germain-en-Laye to announce the death of Leonardo to Francis I. the king shed tears to the memory of this great painter."

In the archives of French history there is not one page to confirm the veracity of Vasari's story; but then, alas! many pages are wanting in French history even in the sixteenth century. The registers of the "Trésor des Chartes" of the reign of Francis I. are not to be found until after the year 1621, nor are the minutes of the Privy Council nor of the State Council. There are only the account of the expenses, which are barely one item per month.

According to Venturi the king was at Saint-Germain on the 1st of May, and consequently could not have been able to visit the dying Leonardo at Amboise the following day. And the argument Venturi brings forward is the fact of an Order in Council having been given that day at Saint-Germain. But this proves nothing, for the order might have been given according to custom by the council during the absence of the king, and signed by the secretary of state. M. Aimé Champollion has well proved the emptiness of this tale, which has been so often brought forward at the present day.

The chancellor dated the Orders in Council from the *place* where he was staying, and sealed them with the great seal, a thing from which he was never separated, on the *day* when he affixed it to acts of sovereign authority. Consequently there was a difference of date between the day on which a resolution was decided by the king and the day it was submitted to the council, sealed by the chancellor, and lastly sent to the office of the court to be registered and published. This custom was still pursued until the last century.

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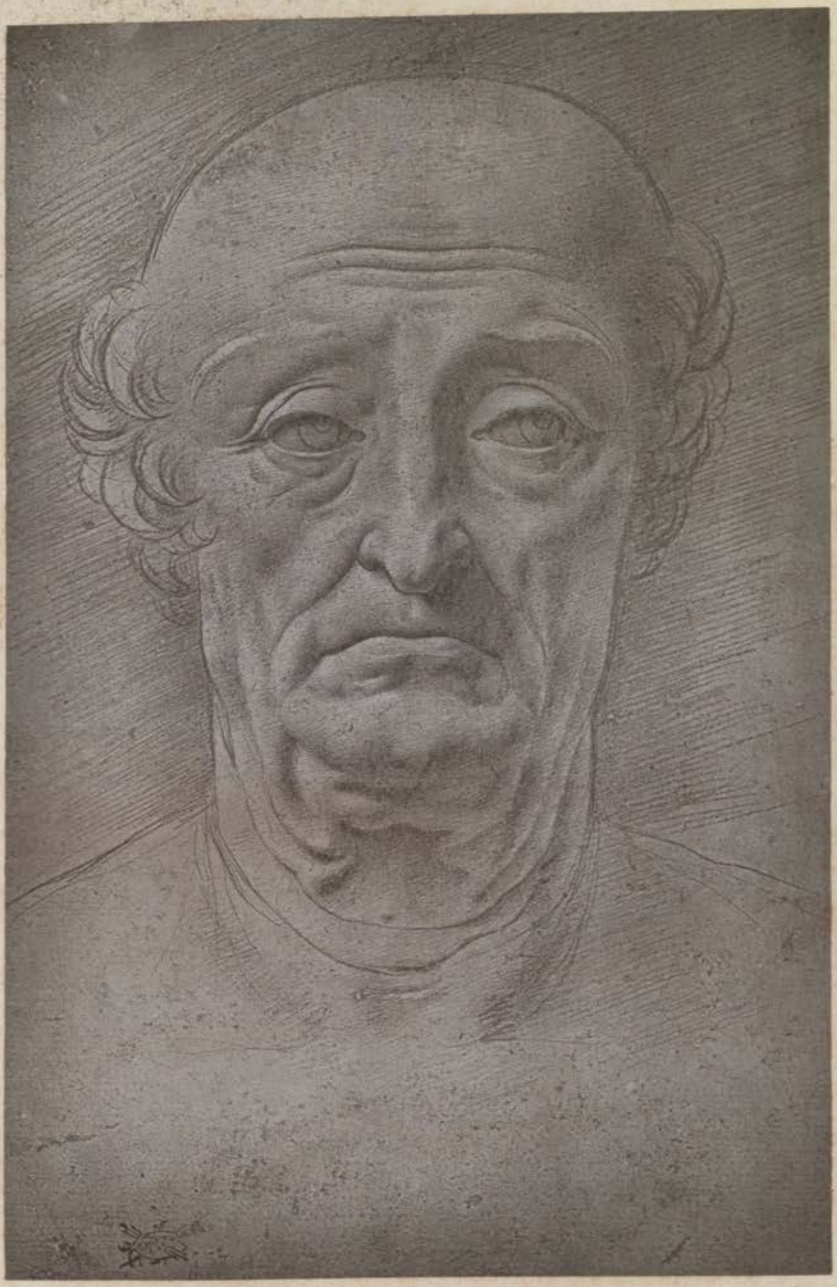
Another Order in Council proves that the presence of the king was not indispensable at the assembling of the members; and also that Francis I. was absent from Saint-Germain on the day following the death of Leonardo. The order in question is a declaration stating that the acts of the notaries shall be dated by the bailiff of Tours, in the bailiwick of Touraine. ("Archives Impériales," x. 8,600.) This is the final protocol: "By the King, to you Bastard of Savoy, Count of Villars, the Lord of Saint-Blancay, the treasurers of France, the chiefs of finance and others present. *Signed.* C. Gédoyn."

When the king presided at the council, his presence was always there minutely stated; therefore, according to the testimony of this paper, the king was absent from the council on the 3rd of May, 1519.

We may therefore draw this conclusion from the above-quoted two proclamations: the first does not prove that the king was at Saint-Germain on the 1st of May, and the second certainly proves that he was not there on the 3rd, and the 2nd, as we know, was the day of the death of Leonardo.

M. Champollion has studied with great care this part of French art history, and takes the same view of it that M. Léon de Laborde does in his "Recherches sur les Arts en France au Seizième Siècle." M. Champollion concludes thus:—"There is no reason to disbelieve a statement affirmed by Vasari, when no authentic document can be found to disprove it. This tradition may therefore be conscientiously believed in, for it is a very probable one. It is not possible that Vasari should have invented a tale containing so many minute and naturalistic details."

For my part, after having combated this belief, I have, for some years past, returned to it, particularly when I remarked that at the time when Vasari was writing the life of Leonardo da Vinci, he was in close companionship with Francesco



HEAD OF AN OLD MAN, FULL-FACE.

From a drawing in the British Museum.

Melzi.[1] They had together looked over the books of Leonardo da Vinci, and it was Melzi who informed him that the anatomical drawings were for the most part by himself and not by Leonardo. It is not to be thought of for a moment that the historian who had, so to speak, before him at the time he was writing a witness of the death of the illustrious master, should have invented with so much precision of detail, a scene so solemn and so worthy of being perpetuated in the history of art and in the history of France.

THE TOMB OF LEONARDO.

By Arsène Houssaye.

IT was with a deep feeling of respect for my enterprise that I undertook to make a search for the purpose of discovering the tomb of Leonardo da Vinci. The greatest men in arts and literature are brethren of the humblest who hold the brush or pen. We all have a portion of filial love in our enthusiasm and admiration for the masterpieces of the parents of art.

I ought to mention that I started for Amboise[2] accompanied

[1] It was from Melzi that Vasari was acquainted with all the precise details of the private life of Leonardo: "Francesco da Melzo, excellent painter, has told me that Leonardo da Vinci, his master, would compose and put together birds which flew in air." Vasari adds that the great seeker did not consider it impossible that man might one day rise into the air and fly as a bird.

[2] In June, 1863.

by the good wishes of every one. The Emperor had long contemplated these researches; M. le Comte Walewski was anxious to superintend the raising a statue to Leonardo; M. le Comte de Nieuwerkerke, and all artists and men of letters, were interested in this labour of love.

From the moment of my arrival in Amboise, the mayor, the archbishop, M. Cartier, the author of "L'Ange de Fiesole," the Notary Boreau, a descendant of that Guillaume Boreau who wrote the testament of Leonardo da Vinci, the receiver-general, the architect of the château, all informed me they considered it as a duty to aid in the research. All have assisted me in these few pages of history which I have attempted to write on Leonardo da Vinci.

Whether Francis I. did or did not receive the last sigh of his beloved Leonardo, there can be no doubt that the Milanese painter having become almost a Frenchman, died in his little château of Clou, attended by his pupil Melzi, and by his followers Villanis and Salaï. Consequently, as Leonardo died at his own house, it was certain he would be buried, according to his last wish, in the church whither he was wont to worship God. This church was that of Saint Florentin, near the château of Amboise.

Many writers have considered the tomb of Leonardo to be in the chapel which is now called that of Saint Florentin, under the château. This chapel was called at that time "Notre-Dame en Grèves," and had neither college nor chapter. This error has been a common one.[1]

Nothing occurred to prevent the last wishes of Leonardo from being fulfilled; he was of the court, and had a right to a

[1] "In the sixteenth century the church of Saint Florentin was the church of the château; first dedicated to the Virgin Mary, it had been, from the beginning of the eleventh century, put under the protection of Saint Florentin, whose body had been brought thither by the Count of Anjou, then Lord of Amboise."—CARTIER.

place among the other dead in the church, and it was most probable he was there interred, in the manner set forth by him. I wish also to believe that Francesco Melzi, whom he called his son, and who inherited his books and drawings, did not deliver Leonardo's body to the dust without giving him a tomb of stone or even a leaden coffin; but though he was laid among the tombs of nobles and great personages, there is no evidence to show that similar honours were paid to the memory of this great painter.

Count Hugo Gallemberg has told me that Councillor Pagavi went during the last century to Amboise to find the tomb of Leonardo da Vinci. He searched diligently at Amboise to see if there had been any monument erected, or if he should be able to find out any traces which might discover the place of his retreat. All that he obtained for answer was, that no tomb bore the name of Leonardo, not even in the church, where nevertheless he was buried; and this must be attributed to those miserable wars, which, under the name of religion, devastated the country not long after the death of Da Vinci. All that Pagavi was able to learn was that at Amboise a painting had been found, said to be by the hand of Leonardo. These religious wars, according to some historians, had plundered the church and violated the sepulchres, so that had the monument ever an existence, it may only have lasted for a day. Those who remember the church affirm that before the revolution there was no tomb of note which might strike the eye. But one of the workmen employed in the search, and an old man, his companion, insisted that in their childhood they had walked on the slab which covered Leonardo in the choir of the church.

After having considered the story I began to doubt it. Beginning by knowing nothing, and finishing by knowing all, appeared suspicious. Moreover, the following anecdote may give an idea of the dangers of tradition.

An aged man, almost a centenarian, living near the little château of Da Vinci, was in the habit of saying to his neighbours, "I know well where the tomb of Leonardo is, but I shall say nothing." I went to visit him in his little house. After many mysterious sentences, he said, "Worthy Leonardo! I always seem to see him going from Clos-Lucé to the Castle of Amboise." I imagined he spoke from hearsay, and in fact he pointed out correctly enough the road by which the painter of Francis I. walked up towards the castle. "Who told you," said I, "that Leonardo passed that way?" "I say so," he returned, "for then I had good eyes." "My good man," said I, "your memory must travel back farther than your years; it is nearly three centuries from the time of Leonardo's death to that of your birth." "I tell you I have seen him." I took up my hat, but he detained me on the threshold. "Would you like to see his tomb?" he asked. "Yes," I answered. "Well, then, come with me to the cemetery." I then recollected that I had seen in the churchyard at Amboise, near the tomb of the Duke of Choiseul, the tomb of a painter of Amboise named Leonardo, who, like his great namesake, had worked at Clos-Lucé and at the Castle of Amboise.

The church of Saint Florentin was pulled down in 1808, under the sacrilegious senatorship of Roger Ducos. I say sacrilegious advisedly, because the vandalism was carried so far as to allow them to sell the tombstones. They went even farther: the leaden coffins were actually melted up, without a thought being given to the remains contained in them. Thus, while money was being coined out of coffins, the human remains were carelessly thrown out to the mercies of the passers-by. Day after day the village children came to sport with the dead, and games of nine-pins were furnished by means of skulls and bones.

One morning, a gardener named Goujon, indignant at this

desecration, rose before daylight, gathered up the bones, and piously deposited them in the ground in the place where the choir of the church had been.

And all was forgotten, forgotten to such a degree, that to this day they believe in the country that the earthly remains of the inhabitants of the castle buried in the church, as well as in the cemetery and cloister, have been transported to the churchyard of Saint Denis at Amboise. The truth being, the only dead left in the castle were those whose last dwelling-place was a stone or leaden coffin.

Nevertheless, the story of the violation of the tombs penetrated to the farther side of the Alps and Rhine, and it was said that during the time of the Revolution the skull of Leonardo the painter had been used as a toy by French citizens.

More than one Italian had gone to Amboise for the purpose of finding the tomb of Leonardo da Vinci, and had gazed sadly on the spot where the church once stood, now covered by thick growing covert.

The gardener's daughter has been often questioned, and it was she who first gave me the idea, some years ago, of seeking for the tomb of the painter of the "Last Supper;" but I do not know whether the fact of her having the painter's name sometimes on her lips, arose from the fact of her hearing him spoken of by her father or by visitors. She it was who pointed out to me the spot where the great painter of Francis I. might be found; a white cherry-tree was growing there, whose fruit was so rich from the fact of its growing above the dead.

On Tuesday, the 23rd of June, 1863, the first spadeful of earth was turned up before the mayor and the Archbishop of Amboise. I set the men to work on three different spots, some to reconnoitre the foundations of the church, others to look for the ossuary, and the rest to search the tombs. It was necessary to dig down deeply, the soil having risen over the site of the

church (whose position I had exactly verified from the drawings of Du Cerceau), to the height of two or three yards. We soon found a large piece of the principal wall of the aisle, some fragments of pavement, the hand of a statue, and bits of broken capitals; but the wall stopped there, for the church was destroyed stone by stone, and even its foundations were blown up.

On the second day we came upon the ossuary under some bricks, no doubt in the same state in which they were put there by the gardener Goujon. These bones are well preserved. I laid aside a skull which appeared to me worthy of observation.

I made an official report of each fresh discovery which brought to light anything of importance. Here below are a few extracts from the reports :—

"This day, the 26th of June, 1863, in presence of the Mayor of Amboise; of the principal clergyman of Saint Denis; of M. Cartier, of the Society of Antiquaries; of Dr. Ortiguier; of M. Franz Verhas, historical painter; of M. Mondain, steward of the castle; and of the Inspector-General of Fine Arts :

"The workmen, in searching the nave of the church, have discovered under plain slabs of baked earth three parallel tombs, containing three skeletons in remarkably good condition; the feet were turned towards the high altar, a posture indicating them to be warriors and not priests of the church. The middle skeleton had the skull sawn in two, but whether for the purpose of dissection, embalment, or preserving the brain, is not known. This skull deserved an examination. The skeleton on the right, whose skull was not nearly so well preserved, had still around it some fragments of a shroud, and a few reddish hairs yet remained on its head. Near the third skeleton, whose skull had fallen in pieces, was found a vase of red earthenware with handles, containing some ashes.

"This day, June 27, 1863, the workmen have brought to light a tomb in stone, of which M. Verhas has made a drawing.

"The slabs were cut and cemented with great care, but unfortunately the one which covered the head having, no doubt, been struck by the mutilators, had broken and the earth had got in. Nevertheless we found the skeleton entire, together with some portions of a shroud and shoes. As in most of the other tombs, we found two vases placed one on each side of the head, one of them being filled with charcoal as brilliant as stalactites."

Here and there we found pieces of sculpture, and broken slabs with inscriptions, coats of arms, or figures on them. Only one tombstone is in good preservation; it bears a female face and the inscription: "*Demoiselle de Cast, fille de noble homme Alphan de Cast.*"

It was at the depth of a yard and a-half under the oldest brick pavement of the church—for we found as many as three different elevations—that we discovered some tombs. A staircase, the masonry of which was still intact, led to the vault, in which were contained three skeletons, the skull of one of them being sawn in two. A little farther on we found another skeleton, the head laid in an iron vase containing some red perfumed sand.

Among the tombs in good condition, we discovered one under the high altar, of a child barely a year old, which, on being touched, crumbled into dust. Some of those present considered it to be the body of one of the children of Charles VIII., although their mausoleum is at Tours. The children of Charles VIII. were in truth buried at Amboise, in the church of Saint Florentin, though it is possible that when the mausoleum was built for them at Tours, their bones were still suffered to remain at Amboise.[1] . . .

[1] We removed the tomb and the mortal remains of the little child into one of the halls of the castle which are closed to visitors.

After an enforced absence, we recommenced our search at the end of July. Some days were passed in clearing away, for, as I said before, the work was a difficult one on account of the accumulation of earth and the precautions we had to take against injuring the tombs, they being for the most part without tombstones.

Our report brought out a letter from a M. Duchatellier :—

"*To the Editor of the 'Presse.'*

"Paris, August 8th, 1863.

"SIR,

"Roger Ducos did not, as has been printed, lay a sacrilegious hand on the tombs of the church belonging to the castle of Amboise. I must stand up for his memory in the acts of his senatorship which he received from Napoleon I. My father, who represented him at the castle, has more than once told me that the tomb of Leonardo da Vinci was a subject which had occupied the attention of Roger Ducos. It was, I believe, in the choir of the church; and the senator spoke of erecting a small mausoleum in the garden to his memory. Passing events did not leave him the time to do so, and perhaps he thought that the trees and flowers planted on the site of the church were the greatest homage which could be given to one who had made an idol of Nature.

"JULES DUCHATELLIER."

This "greatest homage" was decidedly the most economical one. Already had Roger Ducos, to render homage to God, broken down and demolished the church, under pretext that the temple of Nature was more agreeable to Him than a church in want of repair. It was without doubt more economical, as they made money out of the materials, the sculptures, and even the lead of the coffins.

We returned to the choir of the church, which we had at first passed over too quickly.

The 20th of August we lighted on a very old tomb, which had been, at the demolition of Saint Florentin, covered with unequal stones. No doubt the original tombstone had been broken, and, out of respect for the dead, replaced by slabs belonging to the church, and bearing still some rude traces of fresco painting. I suddenly recollected M. Duchatellier's letter. We were, without doubt, on the spot pointed out by him, by an old man of Amboise, a workman, and lastly, by the gardener's daughter. It was in the choir of the church, close to the wall, and toward the top of the plantation, where grew the white cherry tree.

We uncovered the skeleton with great respect; nothing had occurred to disturb the repose of death, excepting that towards the head the roots of the tree had overturned the vase of charcoal. After displacing a few handfuls of earth, we saw great dignity in the attitude of the majestic dead. The sketch taken by M. Franz Verhas gives the idea faithfully. The head rested on the hand as if in sleep. This is the only skeleton we discovered in this position, which is never given to the dead, and appears that of a deep thinker tired with study. . . I had brought with me from Milan a portrait of Leonardo da Vinci, ... and the skull we had taken from its tomb corresponded exactly with the drawing. Many doctors have seen it, and consider it to be the skull of a septuagenarian. Eight teeth still remain in the jaws, four above and four below. Like the skull of Raphael, this other one was well balanced, indicating perfection, but more powerful. . . The brow projects over the eyes, and is broad and high; the occipital arch was ample and purely defined. Intellect had reigned there, but no especial quality predominated.

We collected near the head some fragments of hair or beard, and a few shreds of brown woollen material. On the feet were

found some pieces of sandals, still keeping the shape of the feet. . . .

The skeleton, which measured five feet eight inches, accords with the height of Leonardo da Vinci. The skull might have served for the model of the portrait Leonardo drew of himself in red chalk a few years before his death. M. Robert Fleury, head master of the Fine Art School at Rome, has handled the skull with respect, and recognized in it the grand and simple outline of this human yet divine head, which once held a world within its limits."

*** *As an account of the finding of the Tomb-stone is given in the earlier part of this book it has not been considered desirable to repeat it here.*

THE MANUSCRIPTS OF LEONARDO.

AS in any disquisition relating to Leonardo da Vinci frequent reference must be made to the disordered condition of his MSS., it has been thought desirable to reprint a summary of their present situation and state, extracted from the work "Il Genio di Leonardo," by Gilberto Govi, Milan, 1872.

What and how many manuscript volumes Leonardo left at his death is not known, as all that is stated in the will is as follows :—"The aforesaid testator gives and bequeathes to Messer Francesco da Melzi, gentleman, of Milan, in remuneration of grateful services done to the testator by him aforetime, all and every one of the books which the said testator has at present, and other instruments and portraits relative to his own art, and to the industry of painters," without any farther information.

After the death of Leonardo, on May 2, 1519, Francesco Melzi transported to Vaprio everything which the master had bequeathed him, and preserved them religiously to his dying day. Alberto Bendidio, Resident at Milan from the court of Ferrara, made a fruitless attempt in 1523 to obtain from Melzi the writings and sketches of Leonardo, on the part of his lord, Alfonso I. of Este. No inventory, however, seems to have been taken of these treasures, nor, at the death of Francesco in 1523, do his heirs appear to have given the matter a thought. Of so little value in their eyes were the relics of Leonardo, that

about 1587 a certain Lelio Gavardi was allowed to take away thirteen volumes of Da Vinci's manuscripts, without any opposition on the part of the Melzi family, perhaps without their knowledge. Gian Ambrogio Mazenta restored to the Melzi the thirteen volumes which had disappeared from their possession, and which he had recovered from the clutches of Gavardi. But Signor Orazio, a worthy collegiate doctor, then head of the family, "marvelled much," says Mazenta, "that I had taken so much trouble," and courteously presented him with the recovered volumes, adding that "there were many more designs by the same author lying disregarded in the garrets of his country house." Whether Mazenta took possession of the latter drawings thus offered to him,

"... quo more piris vesci Calaber jubet hospes,"

we do not learn, but the thirteen volumes were undoubtedly in his possession until the sculptor, Pompeo Leoni, of Arezzo, got hold of seven, stating his wish to offer them to Philip II. of Spain. At the death of this prince in 1598, these volumes seem to have remained in the hands of Leoni, who had obtained from the brothers of Mazenta and from the Melzi certain other drawings, sheets and books (probably the sweepings of the garret), sold some of them to the King of England—being in fact part of the Arundel Collection—and others to Count Galeazzo Arconati, who on the 21st of January, 1637, presented them to the Ambrosian Library.[1]

Of the six volumes which were still the property of Mazenta, one was presented by him to Cavaliere Federigo Borromeo in

[1] On this occasion an accurate description of the contents of each separate volume accompanied the gift. From the inscription in the Ambrosian Library, commemorating the liberal and patriotic behaviour of Count Arconati, we learn that a king of England had offered 3000 gold doubloons of Spain for one volume only. This was, no doubt, the "Codice Atlantico," which is stated to have contained at that time 1750 sketches.

1603, another to the painter Ambrogio Figini, by whom it was in turn bequeathed to Ercole Bianchi, called Il Vespino, and a third volume to Duke Carlo Emmanuele of Savoy. The remaining three volumes passed into the hands of Leoni, who by adding to them the loose sheets, sketches and other matters obtained from the Melzi, compiled the huge volume which is still treasured in the Ambrosian Library, and which from its size and form has received the title of the "Codice Atlantico."

Bianchi's volume is known to have been purchased in the eighteenth century by that extensive collector, Consul Smith, of Venice; but of its fate on the dispersion of Mr. Smith's collection we are left uncertain. Of that belonging to the Duke of Savoy we are equally in doubt, but two extensive fires, which in 1667 and 1679 did much mischief to the Royal Library of Turin, offer a mournful probability of explanation.

The books, as devised by their author to Melzi, and which afterwards became the property of Mazenta, must certainly have been more than thirteen in number, for there were twelve which passed from the house of Arconati to the Ambrosian Library, one which had been previously given by Mazenta to Borromeo, and another, presented at a later period (1674) by Count Orazio Archinta; thus making the total number at the end of the last century fourteen volumes. Indeed, if the "Codice Atlantico," composed as it is of several volumes, taken to pieces and mounted on large sheets of drawing paper, had been judiciously arranged according to the various sizes of the drawings, the total of volumes would not fall short of twenty.

It must, however, be observed that the second of the twelve volumes presented by the Arconati, and duly described in the act of donation, was not a manuscript of Da Vinci himself, though often erroneously supposed to be so. It was a copy of the work, "De Divina Proportione," by Fra Luca Paciolo, of Borgo S. Sepolcro; and is the identical copy presented by the

author to Galeazzo Sanseverino, of which the figures were drawn by Leonardo. When in 1796 the French plundered Milan of all the MSS. of Da Vinci, they left behind them this volume of Paciolo, which Dozio therefore supposed to be lost, not being able to find it in the list of those at present in the Bibliothèque de l'Institut, at Paris. The volume, however, is in the Ambrosian Library, in a very good state of preservation.

It results, therefore, that the number of volumes of Leonardo's sketches actually belonging to the Ambrosian Library in 1796 was thirteen, and not fourteen, including the "Codice Atlantico." In the months of May and June of that year the thirteen volumes were seized by the orders of General Buonaparte and transferred to Paris, where the National Library received them on the 25th November. Their arrival was published in the "Moniteur" of the 28th, but shortly afterwards, by order of the executive Directory, twelve volumes were deposited in the Bibliothèque de l'Institut. The transfer was recorded in the "Moniteur." Venturi, in his "Essai sur les Ouvrages Physico-Mathématiques de Léonard de Vinci" mentions the fact; many others repeated it. The detention of the twelve volumes in Paris must therefore be ascribed to the fault of the Austrian commissioner, who, when France was compelled to disgorge a great part of her plunder, demanded only those works of Leonardo which were in the National Library, and from forgetfulness or ignorance, omitted all mention of the others. On October 5th, 1815, therefore, the "Codice Atlantico" was given up, accompanied by some old copies of MSS. of Da Vinci, which were sent to satisfy the reiterated demands of Austria for the works which the authorities of the now Royal Library maintained were not in their custody. It is feared that the two precious volumes now in the Ashburnham Collection were in great part made up by unwarrantable mutilations of the volumes in the Institut. Possibly it was from the same source that the "Treatise on the

Flight of Birds" was derived, which M. Libri not long before his death sold to Count Manzoni of Lugo, and which that devoted bibliophilist rates as a chief treasure of his rich library.

We have yet to mention a manuscript, known as the "Codicetto Trivulziano," having been sold about 1750 to Don Carlo Trivulzio by Don Gaetano Caccia, a *cavaliere* of Novara. It is somewhat singular that this Codicetto greatly resembles the fifth volume of those given by Count Arconati to the Ambrosian Library, the contents of which were accurately noted, while the fifth volume of the twelve, still in France, is a small MS. upon Vision, containing only ten small folios, and is certainly not one of those given by Arconati in 1637. Of the circumstances under which this change was effected no record exists, and it can only be conjectured to be the work of Arconati himself, who possibly considered the treatise on Vision a more important work. Two other MSS. of Leonardo's are in England; namely, one in the British Museum, the other at Windsor. From among the numerous and admirable anatomic drawings in this last we may mention one which, having been engraved by Chamberlaine in 1812, was reproduced in lithography at Brunswick in 1830, with the title "Tabula Anatomica Leonardi Vincii," a fact which gave rise to the erroneous supposition that the original drawing was to be found in the library of Wolfenbüttel.

Various scattered drawings, accompanied as usual by manuscript notes, are to be found in the galleries of Venice, Florence, and Paris, and in the King's Library at Turin.[1]

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[1] The above narrative of the vicissitudes to which Leonardo's MSS. were exposed, having been based wholly upon Sig. Govi's essay, it was better not to interpolate any extraneous matter; but a small correction is permissible, as being extracted from the original letter of Giannambrogio Mazenta, quoted by Venturi. He states that Pompeo Leoni having promised the doctor Orazio to obtain for him the rank of Senator of Milan if he could but get back from Mazenta the thirteen volumes, "Orazio sought out my brother,"—Gian Ambrogio being now

ORIGINAL LETTER

From Leonardo da Vinci to Lodovico Sforza (*see page* 9).

HAVENDO, S^re^ mio Ill., visto et considerato oramai nel sufficientia le prove di tutti quelli che si reputano maestri et compositori d' istrumenti bellici; et che le inventione et operatione de dicti instrumenti non sono niente alieni dal comune uso; mi et forserò non derogando a nessun altro, farmi intendere da Vostra Excellentia; aprendo a quello li segreti miei; et appresso offerendoli ad ogni sua piacimento, in tempi opportuni sperarò cum effecto circha tutte quelle cose, che sub brevità in presente saranno qui sotto notate.

1. Ho modo di far punti (ponti) leggerissimi et acti ad portare facilissimamente et cum quelli seguire et alcuna volta fuggire li inimici; et altri securi et inoffensibili da fuoco et battaglia; facili et commodi da levare et ponere. Et modi de ardere et disfare quelli de li nimici.

2. So in la obsidione de una terra toglier via l'acqua de' fossi et fare infiniti pontighati a scale e altri instrumenti pertinenti ad dicta expeditione.

3. Item, se per altezza de argine o per fortezza de loco et di sito, non si potesse in la obsidione de una terra usare l'officio delle bombarde ho modo di ruinare ogni roccia o altra fortezza se già non fusse fondata sul sasso.

4. Ho anchora modi de bombarde commodissime et facile ad

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a Barnabite monk, the property had devolved upon his brother—"and begged him on his knees to give him back the present he had made; and, as he was a colleague, friend, and benefactor, he (my brother) returned him seven." It was therefore from the good doctor, at length awakened to the value of his treasures, that Leoni received the volumes, but it may be doubted if his shoulders were ever decorated with the Senator's robe in return.

portare, et cum quelle buttano minuti di tempesta; et cum el fumo de quella dando grande spavento a l'inimico cum grave suo danno et confusione.

5. Item ho modi per cave et vie strette e distorte facte senza alcuno strepito, per venire ad uno certo—che bisognasse passare sotto fossi o alcuno fiume.

6. Item fatio carri coperti sicuri e inoffensibili, e quali entrando intra ne l'inimici cum sue artiglierie, non è si grande multitudine di gente d'arme che non rompessino; et dietro a questi poteranno seguire fanterie assai inlesi e senza alchuno impedimento.

7. Item occorrendo di bisogno, farò bombarde, mortari et passavolanti di bellissime et utile forme fora del comune uso.

8. Dove mancassi le operazione delle bombarde, componerò briccole, manghani, trabuchi et altri instrumenti di mirabile efficacia et fora del usato; et in somma se secondo la varietà de' casi componerò varie et infinite cose da offendere.

9. Et quando accadesse essere in mare, ho modi de' molti instrumenti actissimi da offendere et defendere et navili che faranno resistentia al trarre de omni grossissima bombarda; et polveri o fumi.

10. In tempo di pace credo satisfare benissimo, a paragoni de omni altro, in architettura in composizione di edifici et publici et privati; et in conducere acqua da un loco ad un altro.

Item conducerò in sculptura de marmore di bronzo et di terra; similiter in pictura ciò che si possa fare ad paragone di omni altro, et sia chi vole.

Ancora si poterà dare opera al cavallo di bronzo che sarà gloria immortale et eterno onore della felice memoria del S^re^ vostro Padre, et de la inclyta casa Sforzesca. Et se alchune de le sopra dicte cose ad alcuno paressimo impossibili et infactibili, me ne offero paratissimo ad farne experimento in el vostro parco o in qual loco piacerà a Vostra Excellentia: ad la quale umilmente quanto più posso me raccomando, etc.

THE LAST TESTAMENT OF LEONARDO.

IT seems tolerably certain that the testament of Leonardo da Vinci was originally written in French, for according to the statement of the present representative of the Boureau family, (in a letter to M. Houssaye), Pierre Boureau and Jean Guillaume Boureau, who was notary in 1513, received all depositions in French. The French original, however, has not been found, but only the Italian copy now given, which must have been made either at Amboise or in Italy.

Sia manifesto ad ciaschaduna persona presente et advenire, che nella corte del Re nostro signore in Amboysia avanti de noy personalmente constituito messer Leonardo de Vince, pictore del Re, al presente comorante nello locho dicto *du Cloux* appresso de Amboysia, el qual considerando la certezza de la morte e lincertezza del hora di quella, ha cognosciuto et confessato nela dicta corte nanzi de noy nela quale se somesso e somette circa ciò havere facto et ordinato per tenore dela presente il suo testamento et ordinanza de ultima voluntà nel modo qual se seguita. Primeramente el racomenda lanima sua ad Nostro Signore Messer Domine Dio, alla gloriosa Virgine Maria, a monsignore sancto Michele, et a tutti li beati angeli santi e sante del paradiso. Item el dicto testatore vole essere seppelito drento la giesia de Sancto Florentino de Amboysia, et suo corpo essere portato li per li capellani di quella. Item che il suo corpo sia accompagnato dal dicto locho fin nela dicta giesia de Sancto Florentino per il colegio de dicta giesia cioè dal rectore et priore, o vero dali vicarrii soy et capellani de la giesia di Sancto Dionisio d'Amboysia, etiam li fratri minori del dicto locho; et avante de

essere portato il suo corpo nela dicta chiesia, esso testatore, vole siano celebrate ne la dicta chiesia di Sancto Florentino tre grande messe con diacono et sottodiacono, et il di che se diranno dicte tre grande messe che se dicano anchora trenta messe basse de Sancto Gregorio. Item nela dicta chiesia de Sancto Dionisio simil servitio sia celebrato como di sopra. Item nela chiesia de dicti fratri et religiosi minori simile servitio.

Item el prefato testatore dona et concede ad messer Francesco da Melzo, gentilomo da Milano, per remuneratione de servitii ad epso grati a lui facti per il passato, tutti et ciaschaduno di libri, che il dicto testatore ha de presente et altri instrumenti et portracti circa larte sua et industria de pictori. Item epso testatore dona et concede a sempre mai perpetuamente a Battista de Villanis suo servitore la metà zoè medietà de uno iardino, che a fora a le mura de Milano, et laltra meta de epso iardino ad Sala suo servitore nel qual iardino il prefato Salay ha edificata et constructa una casa, la qual sarà et resterà similmente a sempremai perpetudine al dicto Salai, soi heredi, et successori, et ciò in remuneratione di boni et grati servitii che dicti de Vilanis et Salay dicti suoi servitori lui hano facto de qui inanzi. Item epso testatore dona a Maturina sua fantescha una vesta de bon pan negro foderata de pelle, una socha de panno et doy ducati per una volta solamente pagati: et ciò in remuneratione similmente de boni servitii ha lui facta epsa Maturina de qui inanzi. Item vole che ale sue exequie siano sexanta torchie, lequale seranno portate per sexanta poveri ali quali seranno dati danari per portarle a discretione del dicto Melzo, le quali torzi seranno divise nelle quatro chiesie sopradicte. Item el dicto testatore dona ad ciascheduna de dicte chiesie sopradicte diece libre cera in candele grosse che seranno messe nelle dicte chiesie per servire al di che se celebreranno dicti servitii. Item che sia dota ali poveri del ospedale di Dio, alli poveri de Sancto Lazaro de Amboysia, et per ciò fare sia dato et pagato alli tesorieri depsa

confraternita la summa et quantita de soyxante dece soldi tornesi. Item epso testatore dona et concede al dicto messer Francesco Melce presente et acceptante il resto della sua pensione et summa de' danari qual alui sono debiti del passato fino al di della sua morte per il recevoir, overo tesorario general M. Johan Sapin, et tutte et ciaschaduna summe de' danari che ha receputo dal p°. Sapin de la dicta sua pensione, et in caxo chel decede inanzi al prefato Melzo, et non altramente li quali danari sono al presente nella possessione del dicto testatore nel dicto loco de Cloux como el dice. Et similmente et dona et concede al dicto de Melze tucti et ciaschaduni suoi vestimenti quali ha al presente ne lo dicto de Cloux tam per remuneratione de boni et grati servitii, a lui facti da qui inanzi, che per lui suoi salari vacationi et fatiche chel potrà avere circa la executione del presente testamento, il tutto però ale spexe del dicto testatore.

Ordina et vole, che la summa de quattrocento scudi del sole che ha in deposito in man del camarlingo de Sancta Maria de Nove nela città de Fiorenzà siano dati ali soy fratelli carnali residenti in Fiorenzà con el profitto et emolumento che ne po essere debito fino al presente da prefati camarlinghi al prefato testatore per casone de dicti scudi quatrocento da poi el dì che furono per el prefato testatore dati et consignati alli dicti camarlinghi. Item vole et ordina dicto testatore che dicto messer Francisco de Melzo sia et remana solo et in sol per il tutto executore del testamento del prefato testatore, et che questo dicto testamento sortisca suo pleno et integro effecto, et circa ciò che e narrato et detto havere tenere guardare et observare epso messer Leonardo de Vince, testatore constituto ha obbligato et obbliga par le presente epsi soy heredi et successori con ogni soy beni mobili et immobili presenti et advenire et ha renunciato et renuncia per le presente expressamente ad tucte et ciaschaduna le cose ad ciò contrarie.

Datum ne lo dicto loco de Cloux ne le presencie de magis-

tro Spirito Fleri, vicario nela chiesia de Sancto Dionisio de Amboysia, M. Gulielmo Croysant, prete et cappellano, magistro Cipriano Fulchin, fratre Francesco de Corton et Francesco da Milano religioso de covento de fratri minori de Amboysia, testimonii ad ciò ciamati et vocati ad tenire per il indicio de la dicta corte, in presentia del prefato M. Francesco de Melze, acceptante et consentiente il quale ha promesso per fede et sacramento del corpo suo per lui dati corporalmente ne le mane nostre di non mai fare venire, dire, ne andare in contrario. Et sigillato a sua requesta dal sigillo regale statuito a li contracti legali d'Amboysia, et in segno de verita. Dat. a di XXIII de aprile MDXVIII avanti la Pasqua et a di XXIII depso mese de aprile MDXVIII ne la presentia di M. Gulielmo Boreau, notario regio ne la corte de balagio d'Amboysia, il prefato M. Leonardo de Vince ha donato et concesso per il suo testamento et ordinanza de ultima voluntà supradicta al dicto M. Baptista de Vilanis, presente et acceptante il dritto de laqua che qdam bone memorie ReLudovico XII ultimo defuncto ha alias dato a epso de Vince suxo il fiume del naviglio di Sancto Cristoforo ne lo ducato de Milano per gauderlo per epso de Vilanis a sempre mai in tal modo et forma che el dicto signore ne ha facto dono in presentia di M. Francesco da Melzo, gentilhomo de Milano et io. Et a dì prefato nel dicto mese de aprile ne lo dicto anno MDXVIII epso M. Leonardo de Vinci per il suo testamento et ordinanza de ultima volunta sopradicta ha donato al prefato M. Baptista et Vilanis presente et acceptante tutti et ciaschaduni mobili et ustensili de caxa soy de presente ne lo dicto loco du Cloux. In caxo però che el dicto de Vilanis surviva al prefato M. Leonardo de Vince, in presentia del prefato M. Francesco da Melzo et io notario, etc.

BOREAU (BOUREAU).

CHRONOLOGY OF THE LIFE OF LEONARDO DA VINCI.

COMPILED FROM AUTHENTIC DOCUMENTS FURNISHED BY AMORETTI, GAYE, AND OTHER AUTHORS, AND LEONARDO'S OWN MANUSCRIPTS.

1452.

BIRTH of Leonardo, according to local archives. His mother's name was Caterina Cattabriga or Accattabriga.

1472.

Leonardo's name is inscribed in the Red Book of Debtors and Creditors of the Company of Painters. This book is preserved in the archives of the Academy of Fine Arts.

1483.

Up to this year Leonardo dwelt in his own country. He painted the "Roundel," the "Madonna's Head," the "Neptune" for Antonio Segni, and the cartoon for the "Adam and Eve."

Leonardo went in search of fortune to the court of Lodovico Sforza, called Il Moro, Regent of the Duchy of Milan.

1483-1489.

He painted the portraits of Cecilia Gallerani and Lucrezia Crivelli, mistresses of Lodovico Sforza.

Cecilia was the wife of the Count Lodovico Bergamino, whose portrait might have been seen during the last century in the possession of the

Marquis Boursana. Another portrait of Cecilia, of later date, was found in the Pallavicini Gallery of San Calocero.

Leonardo removed, by means of an ingenious system of ropes, the relics of St. Clou, under the last arcade of the Duomo of Milan.

He directed the fêtes and spectacles given at the wedding of Jean Caleas with Isabella of Aragon.

1490.

Leonardo superintended the fêtes and ceremonies at the marriage of Lodovico il Moro with Beatrice d'Este.

He founded the Academy of Milan. The authorities at Milan do not give any date for this fact, but we conjecture that the above may be the correct one, because it coincides with that of the commencement of the "Treatise on Light," which is an educational book.

On the 3rd of April he commenced his "Treatise on Light and Shadow," and recommenced the modelling of the equestrian statue of Francesco Sforza.

1492.

He arranged the tournay festival given to the Duke by Galeas Sanseverino.

He made studies for a plan to render the canal of Martesana from Trezza to Milan navigable, and also occupied himself in designing the embellishments of the palace of Lodovico il Moro, doing the painting himself; and in constructing a bathing saloon for the Duchess in the Park.

He painted a sacred picture, representing the Virgin and Child, St. John and St. Michael, which is at Parma, in San Vitale.

1493.

He worked at the model of the equestrian statue of Francesco Sforza, which was finished in this year, and exhibited to public view beneath a triumphal arch in the courtyard of the palace, on the occasion of the marriage of Bianca Maria Sforza, niece of Lodovico il Moro, with the Emperor Maximilian.

1495.

He painted the portrait of Lodovico il Moro, with his wife and children, upon Calvary, in fresco, on the walls of the convent of Sta. Maria delle Grazie, at Milan.

1496.

He drew some studies, about sixty in number, for the treatise on "The Divine Proportion," composed by Il Frate Luca Paciolo, probably assisted by Leonardo, and published in 1509.

He painted a picture of the Nativity, sent as a present to the Emperor Maximilian by Lodovico il Moro.

He worked at the large picture of the "Last Supper" in the refectory of the Convent of Sta. Maria delle Grazie.

1498.

He was among the number of poets and wits who frequented the court of Lodovico il Moro. Having completed the painting of the "Last Supper," he then composed a work on local movement, having already (according to Paciolo) finished his book on "Painting and the Motion of the Human Body."

1499.

He received from Lodovico Sforza the gift of seventeen perches of a vineyard, which this prince had bought from the monks of San Vittore, near the Vercellina Gate.

1499-1500.

Lodovico il Moro having been sent as a prisoner to France, Leonardo da Vinci left Milan for Florence, accompanied by his friend Luca Paciolo.

1500.

The model for the equestrian statue of Francesco Sforza, on which the artist had been at work seventeen years, was used as a target and shattered to pieces by the Gascon cross-bowmen at the entry of the French into Milan.

Leonardo painted the portraits of Mona Lisa, called "La Gioconda," "Ginevra," and "Amerigo Benci;" and contemplated the project of rendering the Arno navigable from Florence to Pisa.

1502.

Cæsar Borgia, Duke de Valentinois, appointed Leonardo architect and engineer in general to the castles and fortresses of the Romagna.

On the 10th of July, Leonardo was at Urbino, where he designed a dovecote, a staircase, and a fortress. On the 1st of August he visited

Pesaro; on the 8th, Rimini; the 11th, Cesena; and on the 6th of September, Cesanatico, where he designed the gate.

He quitted Emilia to return to Florence, and thence he made another tour through the central parts of Tuscany.

1503.

On the 23rd of January Leonardo was summoned, with the other most eminent artists of Florence, to give his advice as to the most suitable place on which to erect the statue of "David" by Michael Angelo.

On the 23rd of July he was in the neighbourhood of Pisa, occupied in a project for turning the course of the Arno.

1503-1504.

He is mentioned in the Debtor and Creditor Book of the Company of Painters.

1504.

Death of Piero da Vinci, father of Leonardo.

1504-1505.

Leonardo made the sketch for the "Battle of Anghiari" (Battle of the Standard) in competition with Michael Angelo.

1505.

He made at Florence the models of three statues to be placed on the northern porch of the Church of San Giovanni; these were cast in bronze by Francesco Rustici.

1507.

Death of Francesco da Vinci, Leonardo's uncle. Leonardo commenced and nearly finished two Madonnas.

In the month of August of this year he went back to Milan, with the title of Painter to the King.

1508.

He wrote a pamphlet entitled "The Canal of Martesana."

1509.

He completed the quay for the disembarkment of the boats from San Cristoforo to Milan.

He was, according to most authorities, engaged to arrange the fêtes which celebrated the entry of Louis XII. into Milan, and it is probable that he then made the portrait of Trivulzio, mentioned by Lomazzo in his "Treatise on Painting."

1511.

He was at Florence about a lawsuit which had sprung up between himself and his brothers, concerning the estates of their late uncle.

1512.

He returned to Milan.

1514.

On the 24th of September he left for Rome with Giovanni (Beltraffio ?), Francesco Melzi, Lorenzo (Lotto ?) and Il Taufoia.

Called to Rome from Florence by Giulio de' Medici, brother of Leo X., to assist at the enthronement of that Pope. He painted at Rome two little pictures for Baldassare Turini, of Pescia; one of these is mentioned in the catalogue of the Düsseldorf Gallery.

1515.

To this year, according to Amoretti, belongs the wonderful story of the figure of a lion which Leonardo invented, and, by an ingenious contrivance, caused to walk before Francis I. of France, and to stop and open its breast, which was filled with "fleur de lis."

1516.

In the end of January Leonardo was taken into France by Francis I. in the quality of Painter to the King, with a salary of 700 crowns a year.

1518.

On the 18th of April he made his will at the Castle of Cloux, near Amboise.

1518-1519.

Leonardo da Vinci died on the 2nd of May in this year. (That is, nine days after he had made his will. The year then began at Easter.)

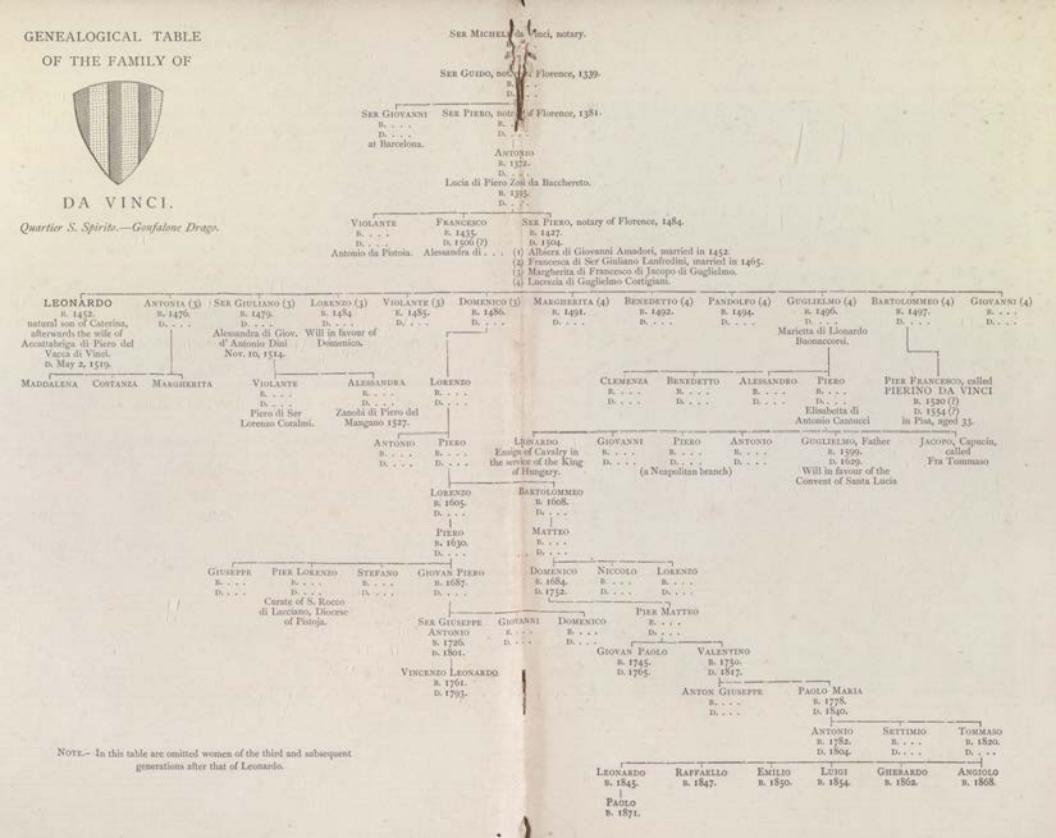
GENEALOGICAL TABLE OF THE FAMILY OF DA VINCI.

Reprinted from Uzielli's "Ricerche intorno a Leonardo da Vinci."

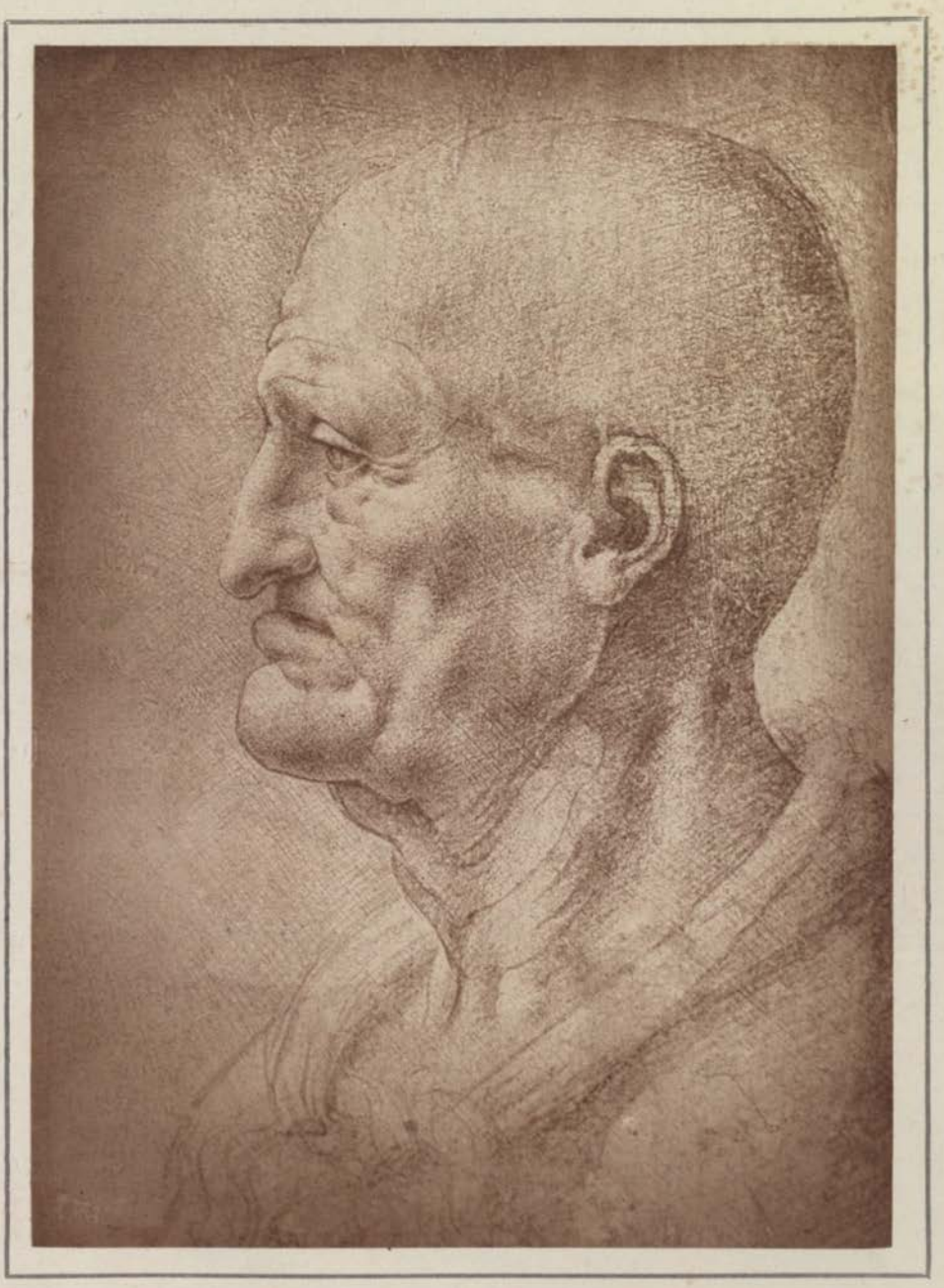
GENEALOGICAL TABLE
OF THE FAMILY OF

DA VINCI.

Quartier S. Spirito.—Gonfalone Drago.



NOTE.– In this table are omitted women of the third and subsequent generations after that of Leonardo.



HEAD OF AN OLD MAN IN PROFILE.

From a drawing in the Pitti Gallery, Florence.

CATALOGUE OF

LEONARDO'S PAINTINGS.

Except when the authority is named, the criticisms contained in the following Catalogue must be taken as the opinions of M. Arsène Houssaye, from whose work it has been chiefly compiled.

A CLASSIFIED AND DESCRIPTIVE CATALOGUE[1]

OF THE PRINCIPAL PAINTINGS OF

LEONARDO DA VINCI.

PART I.

HOLY FAMILY—MADONNA—CHRIST.

I.

THE BAPTISM OF CHRIST.

In the Gallery of the Academy of Fine Arts, Florence.

LEONARDO DA VINCI painted nothing more than the angel in this picture, which was the composition of his master, Andrea Verocchio. Tradition affirms that this was the last work ever executed by Andrea, for that, on seeing the angel painted by his pupil, he threw down his palette for ever.

Verocchio drew correctly, but his figures are stiff and spiritless; the angel of Leonardo has been aptly termed a "brilliant stain" on his picture—a ray of sunlight on a faded page.

Engraved in Rosini's "Storia della Pittura Italiana."

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[1] Compiled chiefly from the Appendix to the "HISTOIRE DE LÉONARD DE VINCI" by M. ARSÈNE HOUSSAYE; and "ESSAI D'UN CATALOGUE DES ŒUVRES DE LÉONARD DE VINCI" by DR. RIGOLLOT.

2.

MADONNA OF VAPRIO.

Painted in fresco on a Wall.

LEONARDO lived at Vaprio for four years in a house near the Adda, the neighbour of his landlord Melzi, who dwelt in the adjoining villa. On the wall overlooking the court-yard of this villa is painted a picture of the Madonna and Infant Saviour. It is of colossal size, the head of the Virgin being not less than six *palmi*, or about four feet six inches, in height. In the year 1796 some soldiers of the Republic bivouacked in this court, lit a fire against the wall of Leonardo's house, and blackened the fresco like the funnel of a chimney. The heads, fortunately, were comparatively uninjured. The whole has since been repainted.

Passavant believes that Leonardo made the cartoon for this picture, but that the fresco itself was the work of Francesco Melzi. We may conclude, however, that Leonardo did more than the sketch. The Virgin has a beautiful though severe countenance, and the Child wears that smile of gracious expression which Leonardo, and perhaps he alone, knew how to represent.

Engraved in Fumagalli's "Scuola di Leonardo."

3.

THE VIRGIN AMONG THE ROCKS. (*La Vierge aux Rochers.*)

In the Gallery of the Louvre.

THIS is possibly a copy. Waagen says that this painting cannot have been the work of Leonardo, "for, in opposition to the remarkable and poetical style of composition, characterizing the epoch when the talents of this painter had attained their highest perfection, there are certain parts, such as the heads of the angel and of the Virgin, which are without expression, and display a surprising feebleness of design; the folds of the drapery, moreover, have a false and stiff appearance."

M. Passavant hazards the following conjecture: "We cannot suppose that Leonardo was content with executing merely the sketch for this composition: we believe that a picture, formerly in the Chapel of the

Conception in the Church of the Franciscans at Milan, which is mentioned in the 'Treatise on Painting,' by Lomazzo (p. 171-212), and also in the 'Passeghi de Scanelli et Lormanni,' (1751, Milan), and which was sold in 1796 for thirty ducats to the painter Hamilton because it was thought to be a copy, was really by Leonardo himself. It afterwards passed into the collection of the Duke of Suffolk; two angels which were formerly at either side of the principal picture are at present in the gallery of the Duke de Melzi, and attest by their brilliancy the authenticity of the work of which they once formed a part. The picture in the Louvre is doubtless a copy."

The Duke of Devonshire possesses a drawing of very great beauty, representing a head of the Virgin with her hair falling on both sides of the face, which is turned a little to the right. On the same page is a head of the Holy Child, three quarters seen. These two studies are in black chalk, relieved with white, on blue paper. M. Passavant, who has given this description, adds: "This drawing, of extraordinary beauty and well preserved, appears to be a study for the 'Vierge aux Rochers' of the Louvre."

In the Museum at Nantes there is a duplicate of the "Vierge aux Rochers" (No. 199), and the catalogue affirms that it is the original: this statement cannot be depended on.

"The aspect of the Virgin in the 'Vierge aux Rochers,'" says Théophile Gautier, "is mysterious and charming. A grotto of basaltic rocks shelters the divine group, who are sitting on the margin of a clear spring, in the transparent depths of which we see the pebbles of its bed. Through the arcade of the grotto, we discover a rocky landscape, with a few scattered trees, and crossed by a stream, on the banks of which rises a village. All this is of a colour as indefinable as those mysterious countries one traverses in a dream, and accords marvellously with the figures. What more adorable type than that of the Madonna! it is especially Leonardo's; and does not in any way recall the Virgins of Perugino or Raphael. Her head is spherical in form; the forehead well-developed; the fine oval of her cheeks is gracefully rounded so as to enclose a chin most delicately curved; the eyes with lowered eyelids encircled with shadow, and the nose, not in a line with the forehead, like that of a Grecian statue, but still finely shaped; with nostrils tenderly cut, and trembling, as though her breathing made them

palpitate; the mouth a little large, it is true, but smiling with a deliciously enigmatic expression that Da Vinci gives to his female faces, a tiny shade of mischief mingling with the purity and goodness. The hair is long, loose, and silky, and falls in crisp meshes around the shadow-softened cheeks, according with the half-tints with incomparable grace."

This picture was formerly in the possession of Francis I. It was originally painted on wood, but was transferred to canvas some years since, and has been re-touched to such an extent that, at first sight, it is difficult to pronounce any opinion upon it.

In the Exhibition of Works of the Old Masters at the Royal Academy in 1870, the Earl of Suffolk exhibited his "Vierge aux Rochers," which Waagen says is "most probably the original."

Engraved in line by Desnoyers. (*See Photograph.*)

4.

THE VIRGIN SEATED ON THE KNEES OF ST. ANNE.

In the Gallery of the Louvre.

"IN the picture of the Virgin seated on the knees of St. Anne,"—we quote Théophile Gautier,—"the shadows are more subdued than in 'La Vierge aux Rochers;' the painter has certainly not employed in this picture that dark tint which has marred his other paintings; the colouring is lighter and cooler. In a landscape strewn with rocks and little trees, of which you may count the leaves, St. Anne holds on her knees the Virgin, who gracefully leans towards the infant Jesus. The Child is playing with a little lamb, which He holds gently by the ear, with a charmingly infantile action which takes nothing from the nobility of the composition. A few slight lines cross the forehead and cheeks of St. Anne, but do not detract from her beauty; for Leonardo shrank from the representation of sadness, and would not afflict the eye by a spectacle of decrepitude. The head of the Virgin is exquisitely fine in outline; her face beams with virginal grace and maternal love; her eyes are bathed in tenderness, and her half smiling mouth has that indefinable expression of which Leonardo alone knew the secret."

M. Taine also speaks of this painting, giving us, as it were, a page of

music: "In the little Jesus of the picture of St. Anne, a shoulder, a cheek, a temple, alone emerge from the shadowy depth. Leonardo da Vinci was a great musician. Perhaps he found in that gradation and change of colour, in that vague yet charming magic of chiaroscuro, an effect resembling the crescendos and decrescendos of grand musical works."

The authenticity of this picture has often been called in question. Waagen attributes it to a pupil of Leonardo, "so much," he says, "is the usual smile of his figures here exaggerated and affected." Rosini says that it may be the work of Salaï, but that it had perhaps been re-touched by Leonardo, unless, indeed, it be by Bernardino de Luini. M. Delécluze is of the same opinion as M. Rosini. Passavant, however, affirms that it is an original picture, for, says he, "none of the pupils of Leonardo had a touch so spiritual, or that firmness of expression so much to be admired in this work."

There are many existing copies; the greater number of which have claimed to be the original, but it is acknowledged now that many of these are much inferior to the painting in the Louvre. Even though the blue garment of the Virgin is effaced, though the left leg has certainly been re-painted, yet we think this is the work of Leonardo da Vinci, or else a masterpiece by Bernardino de Luini.

A sketch for this picture, according to M. Rigollot, is in the collection belonging to the Plattenberg family, in Westphalia. Among the copies may be cited: one which was for some time in the collection at the sacristy of San Celso at Milan, but is now in the Leuchtenberg Gallery at Munich. It is by Salaï; D'Argenville has, however, attributed it to Leonardo himself. Another, which is in the Royal Gallery at Florence, the Catalogue of 1844 attributes to Salaï. This was bought at Vienna, according to Lanzi, by the Grand-Duke of Tuscany, Ferdinand III. Viardot, speaking of another copy at the Ambrosian Library at Milan, gives it as his opinion that it is by Luini. Kugler mentions one in the Brera Gallery; "it is," says he, "the work of Andrea Salaino, for one can recognize the hand of this master by the warm and transparent red of his flesh-tints."

The Royal Museum of Madrid also possesses a copy, or a sketch of an inferior kind, of the St. Anne of the Louvre.

Engraved by Langier; by Cantini; and in Landon's "Vies et Œuvres des Peintres." (*See Photograph.*)

5.

THE HOLY FAMILY OF ST. PETERSBURG.

In the Gallery of the Hermitage.

THE history of this picture reads like an old legend. Amoretti, the Abbé Lanzi, and M. de Gallenberg all repeat the same story. The painting was lost when the palace of the Dukes of Mantua was pillaged by the Germans. It disappeared for a long time, and at length fell into the possession of the Abbé Salvadori, one of the secretaries of the Count Firmian. Salvadori also concealed the picture, believing that the Count, who was Governor of Mantua, would make him return it to the palace whence it had been stolen. After the death of Salvadori, the picture was sent to the village of Mori, in the Trent district, where it was sold by the heirs of the Abbé to the agents of Catherine II.

Passavant says of this picture that "all those who have seen it in the Gallery of the Hermitage are convinced that it is a superb work, worthy of the great Florentine master."

Pagavi thought it so beautiful, and so nearly like the work of Raphael, that he marked it with the monogram of Leonardo, in order to prevent its being attributed to the Prince of Painters.

Henri Beyle likewise speaks of this painting with enthusiasm, saying that "Leonardo never painted anything better or more sublime."

There is also a long description of it in the "Histoire de la Peinture en Italie" by the same author. "Mary," he says, "is seen full-face; she gazes on her son with pride, and is one of the grandest figures of the mother of our Saviour that was ever painted; the Child, full of gaiety and life, embraces her; behind them, to the left of the spectator, is a young woman reading. This figure is frequently named St. Catherine, but it is probably the portrait of the sister-in-law of Leo X., wife of Giulio de' Medici, to whom she was married in January, 1515; this picture being, according to Beyle, of a date subsequent to that event. On the opposite side is St. Joseph, whose head is the most original one in the picture; he looks down smilingly upon the Holy Child with a graceful expression of playful humour. This is Leonardo's own idea; for it was far from the spirit of that age to introduce any gaiety into a sacred subject; in this respect he was the precursor of Correggio."

M. Viardot, on the contrary, says, in his "Musées d'Allemagne et de

Russe," that this is "a defective work, in which two women, Mary and Catherine, are drawn one above another, where all is ugly, ungraceful, and grotesque (!)."

Kugler indicates many copies or replicas of this "Holy Family." The best known is the "Vierge au Bas-relief," in the possession of Lord Monson; others are in England or Milan.

The St. Petersburg picture bears the signature "L. D. V."; this alone would not prove it to be the work of Leonardo da Vinci, were the touch of the master not otherwise plainly visible on this beautiful painting.

Engraved in the "Galerie de l'Hermitage, avec descriptions," by Camille de Genève.

6.

THE INFANT JESUS.

At Bologna.

VASARI speaks of a picture of the Holy Child, that Leonardo painted for Baldassare Turini. It is, perhaps, this statement of Vasari that has caused Lanzi to cite as authentic, "a Child Jesus lying in a rich cradle, ornamented with pearls, which is at Bologna, in the apartments of the Gonfaloniere at the palace."

This picture exhibits the Holy Infant clothed, with the exception of the head, which is crowned with light, and recalls the luminous effect of the portrait of Lucrezia Crivelli in the Louvre.

Henri Beyle says that he believes it to be by Leonardo, but in his early manner; he adds that it shows nothing of his customary style. According to Vasari, this Holy Child was "marvellously beautiful and graceful."

7.

CHRIST DISPUTING WITH THE DOCTORS.

In the National Gallery, London.

THIS picture, which formerly belonged to the Carr Collection, was originally the property of the Aldobrandini family. Its authenticity has been much disputed. Rigollot is of opinion that Leonardo made the original drawing, but that the picture itself was painted by Bernardino Luini. Other critics agree in assigning the work to this distinguished pupil of Leonardo.

In the fifteenth and sixteenth centuries, scholars followed closely on the steps of their instructors. It was not until after the publication of the Abbé Lanzi's "Storia Pittorica" that we began to concern ourselves much with many painters of the second order, the names, the merits, and the works of whom he revealed. He it was who first restored to fame Luini, Salaï, Solario, Oggione, Cesare da Sesto, Beltraffio, and other pupils of Leonardo da Vinci.

"We have now," says Waagen, "learned how to detect the peculiarities of each of these artists, and in what authentic work of Leonardo can be found that warm flesh tint so brilliant in all its parts, and those local tints of blue and red draperies, so pure, so uniform, and so well painted? But however beautiful may be the features of Christ, although they recall in general the well-known type of the school of Leonardo, although there is a slight tinge of melancholy, the face lacks that depth of character, that grandeur, which Leonardo usually imprinted on his works. The composition and the drawing are much too feeble to be his work, if indeed it could be recognised through the unfortunate restorations which this picture has undergone. The forehead, the cheeks, and the hands of Christ have above all suffered from the method of Italian restorers, which consists in retouching the flesh tints with a coloured varnish: a process which may satisfy the uncritical crowd, but which vexes the true connoisseur, who seeks in vain for the original touch of the painter's pencil."

D'Agincourt says that though this picture has been attributed to Bernardino Luini, he believes it to be really Leonardo's. In his "Histoire de l'Art" he thus speaks of it:—"The subject of this painting is confused and badly arranged; the figures are half length. The Saviour is represented with his face towards us; his expression is sweet and noble, but rather feminine, in spite of his growing beard; he wears a garment of silk covered with jewels."

In the opinion of Herr Passavant, "This splendid picture is most carefully finished, and in parts finely coloured, especially the hands of the Christ; it is in good preservation, apparently one of Leonardo's later productions, more fulness and roundness of form being perceptible than in his earlier works. The colours are also laid on in full body, although with much tenderness."

A fine copy of this picture is in the Spada Palace at Rome.

Engraved by Felsing; by Ghigi; by Leonelli; and in Landon's "Vies et Œuvres des Peintres." (*See Photograph.*)

8.

CHRIST BEARING HIS CROSS.

In the possession of Sir Thomas Proctor Beauchamp.

THIS painting was shown at the Exhibition of Works of the Old Masters at the Royal Academy in 1871.

9.

HEADS OF CHRIST.

IN his "Catalogue of the King's Pictures" (Paris, 1754), Lépicié mentions a half-length figure of Christ, carrying the globe in His left hand and in the attitude of blessing it with His right. He notes this as being very feeble. This picture was etched by Wenceslaus Hollar, in 1650. The "Magasin Pittoresque" of the year 1849 published a wood-engraving of it after a drawing by Granville. A notice by M. de Chenevières-Pointel accompanies this engraving.

M. Passavant states that he found several different heads or busts of Christ in profile, either bearing the cross or holding the globe: but he considers these as nothing more than the productions of Leonardo's pupils.

Engraved also by Felsing.

"Never," says M. G. d'Adda (*Gazette des Beaux-Arts*, August, 1868), "has sentiment inspired by dignity and truth of religion been carried farther than in the head of Christ in the Gallery of the Brera." Must we apply to this also the decision of M. Passavant, just quoted, that all the heads of Christ attributed to Leonardo are the work of his pupils? Gault de St.-Germain mentions a head of the Saviour as being in the possession of Prince Lichtenstein, at Vienna, which is regarded by Winckelmann as one of the most remarkable productions of genius, a sublime work of the highest type of manly beauty.

In the Cathedral at Antwerp is a head of Christ, attributed to Leonardo; we know not on what authority.

10.

THE MADONNA OF LUCCA.

In the Casa Buonvisi at Lucca.

THIS small picture is regarded as a very early work of Leonardo's, and, according to Beyle, in his first style. M. de Rumohr, in his "*Italienische Forschungen*," says, "Here may be found traces of those strivings after intense expression so peculiar to this master; and at the same time a certain similarity to the Florentine painters of the time of Ghirlandajo."

11.

THE VIRGIN OF SAN ONOFRIO.

In the Convent of San Onofrio, at Rome.

D'AGINCOURT mentions this picture as being painted in fresco on a window frame of the Convent of San Onofrio. The Virgin is represented holding a flower, which she offers to the infant Jesus. It has been restored by Palmaroli, on a gold background. A bust seen behind is supposed by d'Agincourt to represent the donor.

As far as can be judged, after the repainted portions of Palmaroli and the marks left by time, this picture much resembles in subject, and even in execution, the works of Lorenzo di Credi, one of Leonardo's fellow-students. But M. Rumohr concludes that "it is a work of Leonardo's youth, done during his sojourn at Rome, before leaving it for the court of Lodovico Sforza, at Milan." If, however, Leonardo did not go to Rome, for the first time, earlier than 1514, this fresco would, according to chronology, be a work of his "third epoch," which would seem more than doubtful.

12.

THE CARTOON OF ST. ANNE.

In the Royal Academy of Arts, London.

THE early history of this Cartoon is much complicated. Vasari recounts many details, and describes the work with great admiration, at some length, but, after Vasari, a cloud hangs over its history. Lanzi believes that it was lost; Lomazzo, in his "Trattato della Pittura," says

that it may be found in the possession of the painter Aurelio Laurino, at Milan, after it had been seen in France.

In any case, the description Vasari has left us closely corresponds with the picture in London; which does full justice to the genius of the master, who has stamped this work with the imprint of his power. "It excited," says Vasari, "general admiration when it was exhibited in Florence, in the year 1502." It is a drawing in black and white chalk; the heads are rather less than life size; the perfection of the design is admirable, though incomplete; the extremities and the drapery of the Virgin are scarcely indicated; and the whole work is much faded.

The Virgin holds the Infant Christ upon her knees, and the child is gazing at the little St. John playing with a lamb. St. Anne, seated by the side of the Virgin, is looking at her daughter with ecstasy, while with her left hand she points heavenward. "Her smile," says Vasari, "indicates the excess of her joy in seeing her offspring raised to celestial rank."

Herr Passavant says, "This is a unique and beautiful cartoon. Through what various hands it passed, previous to its arrival in England, I have not been able to discover. It is now treated as a precious relic, and kept under glass in the keeper's room. It is drawn in black chalk and highly-finished. In style of treatment, as far as regards a greater attention to effect of light than to strict symmetry of form, it resembles the sketch of the Adoration of the Kings in the Florence Gallery. It is in good preservation."

Engraved by Anker Smith. (*See Photograph from the original.*)

13.

THE VIRGIN OF MUNICH.

In the Pinacothek.

VASARI recounts that he saw at the house of Signor Giulio Torini a small picture by Leonardo, "representing the Madonna with her son in her arms." This had been painted with extreme care, but was already much altered. Leonardo is said to have painted it while at Peschia, when on his way from Milan to Rome, for Signor Baldassare Torini, for whom also he executed an Infant Christ of marvellous beauty and grace.

It has been suggested that this description probably refers to the picture now numbered 567, in the Pinacothek at Munich, in which the Virgin, seated in an open cave, surrounded by a landscape, holds with her right arm the infant, who is couching by her side beneath her mantle. It much resembles the "Vierge aux Rochers" of the Louvre.

In his book on "l'Art en Allemagne," M. Fortoul mentions this picture; he attributes it to Leonardo, and extols its "delicious colouring;" a praise which some may think calculated rather to cast a doubt on its authenticity.

14.

THE VIRGIN "AU BAS-RELIEF."

Formerly Lord Monson's, now in the possession of the Countess of Warwick, at Gatton Park.

THIS Holy Family, which appears to be nearly a repetition of the picture at the Hermitage, was, in 1835, the property of Mr. Woodburn, a picture-dealer in London, who sold it to Lord Monson. M. Passavant says of this picture, "it is one of the best-preserved works of Leonardo; the drawing is exquisite, and the colours still fresh: it is altogether an admirable and original picture." Other critics, however, decline to regard it as undoubtedly authentic, and suggest that it may be an extremely skilful copy of a sketch by Leonardo. The figures are rounded, the tones warm yet brilliant, but the expressions of the countenances are not quite those associated with Leonardo's style.

This group is composed of the Virgin, the infant Jesus, the youthful St. John, Joseph, and Zacharias.

At Milan, in the gallery of the Duke de Melzi, there is a Holy Family comprising the same personages. It is attributed to Cesare da Sesto, whose "Adoration of the Magi," in the gallery at Naples, has also for its principal group a Holy Family much resembling it.

The collection of Cardinal Feschi contains another copy of this picture, which is generally known as the "Vierge au Bas-relief," although the bas-relief from which the name is taken is nothing more than one of the smaller accessories.

In the Fitz-William Museum, there is a fine copy, on a reduced scale.

Engraved by Förster.

15.

THE HOLY FAMILY OF MADRID.

WE owe our acquaintance with this picture, this "famous work," to M. Viardot, who, in his book, "Musées d'Espagne, d'Angleterre et de Belgique," has spoken of this Holy Family in terms of exaggerated laudation.

The solidity and the perfect preservation so especially dwelt on by M. Viardot tend to cast a doubt on the originality of this picture; Leonardo's paintings are not usually either solid or in good preservation.

M. Kugler has not mentioned it in his catalogue of the principal works in the "Museo del Rey," included in volume ii. of his "Handbuch der Geschichte der Malerei."

M. Viardot says that this "Holy Family" is painted in the manner of "Modesty and Vanity," in the Sciarra Palace, which latter picture he also highly praises. However, M. de Rumohr attributes the work in question to Salaï, and Fumagalli believes it to have been painted by Luini.

16.

THE VIRGIN OF THE ESTERHAZY GALLERY.

THE Virgin in this painting is between St. Catherine and St. Barbara, and supports in her arms the Holy Child, who is looking at a book on the table before Him. M. Passavant says "that it is agreed to attribute it to Luini."

The group is shown at half length, and, according to M. Viardot, recalls the Holy Family of Madrid, which he considers it nearly equals in importance and beauty. He goes on, however, to point out that the heads of the three women singularly resemble each other, and are of the same type, scarcely varied.

Probably this picture was sketched by the great master himself, and finished by Luini.

Engraved by Steinmüller.

17.

VIRGIN, WITH THE DONOR.

In the Brussels Gallery. (?)

LÉPICIÉ gives the following description of this Virgin in his Catalogue Raisonné of the pictures belonging to the King of France: "Virgin holding the Infant Christ. The Holy Mother, in a simple and graceful attitude, bears in her arms the Holy Child, near whom may be seen the little St. John.

"In the foreground of this picture, the artist has placed the figure of a kneeling man, in the act of adoration. The background is partly formed by a curtain.

"Independently of the grand character of the design, there may here be found that grace and fidelity of expression which Leonardo gives his figures."

This picture was presented to the Museum of Brussels in the year xi. of the first French Republic.

18.

VIRGIN.

Belonging to Lord Ashburton.

AN angel is seen raising the cover of a bed on which the Divine Infant is sleeping in the arms of His mother; while the little St. John and an angel watch by Him.

The figures are half the size of nature.

This picture, which was formerly in the Prior's chamber of the Escurial, subsequently formed part of the collection of General Sebastiani.

Dr. Waagen says it is by Luini. At present it belongs to Lord Ashburton, who, on the authority of many critics, believes it to be genuine.

19.

VIRGIN, OF THE ALBANI PALACE.

Rome.

BOTH Lanzi and Raphael Mengs speak of this picture; the former says that its grace is impossible to describe, and the latter goes so far as to

assert, that it is the most valuable work in that gallery; on the other hand, Passavant simply refers to it as "perhaps by Luini, or one of the same school."

The Virgin is represented as though asking for a branch of lilies with which her Infant Jesus is playing, while he shrinks away as unwilling to part with them. It is altogether a very graceful composition.

Engraved by Martinet. (*See Photograph.*)

20.

THE VIRGIN, AT ALTON TOWERS.

Earl of Shrewsbury.

HERR PASSAVANT (in "Kunstreise durch England und Belgien") mentions a small picture by Leonardo, preserved at Alton Towers, the seat of the Earl of Shrewsbury. "It shows the Virgin with the Infant Christ upon her breast; the Child stretches out his hand for a pink which she holds in her hand. The background represents a landscape, with the Lake of Como in the distance, and in the foreground is a garden; the mother wears a black dress and yellow mantle."

21.

THE VIRGIN OF THE POURTALÈS GALLERY.

THE "Bulletin de l'Alliance des Arts," vol. i. page 30, refers to this painting, and attributes it to Leonardo. It was once in the possession of the Royal Family of Spain, and was bought for a work of Luini, at the Pourtalès sale. "In it the Virgin is shown bending towards her Infant Son, as she offers him a flower."

22.

THE VIRGIN OF ANDREA SOLARIO.

In the Louvre.

THIS picture, signed "Andreas de Solario fec.," although it vividly recalls the manner of G. Ferrari, his master, is most probably founded on

a design by Leonardo, "for," says Passavant, "there is still existing in the collection at the Ambrosian Library, a drawing in red chalk by this master, half-length life size, which has served as a basis for many of the pictures painted at Milan by the pupils or the imitators of Leonardo's school; these are, however, all inferior to that at the Louvre. This drawing by Leonardo has been engraved by Gerli."

So Andrea Solario must nevertheless be awarded a great share in the praise due to this admirable picture, which, with its lightness, its inimitable charm, its transparency and brilliant colouring, belongs entirely to the Lombard school.

23.

THE VIRGIN OF THE BRERA GALLERY.

Milan.

THIS also has been pointed out to us by Passavant. "The Virgin and the Child Jesus are in a landscape; the picture is incomplete. It was formerly in the possession of the Archbishop of Milan, and is at present in the Brera Gallery. The design is too feeble to be Leonardo's; but it may be by Salaino."

24.

THE HOLY FAMILY OF BRESCIA.

AGAIN our information rests on the authority of Passavant: "The Holy Family, in an open tent, surrounded by a landscape with a river, on which there are two swans. This picture, executed with great care, has passed from the collection of Sigismund Belluso, of Mantua, to that of the Count Theodore Lecchi, at Brescia; it is evidently a work by one of Da Vinci's pupils."

25.

THE MADONNA OF MILAN.

"THE Virgin is holding the Holy Child with both hands, and he strokes her chin as though he were about to embrace her, meanwhile turning

his head towards the spectators. The picture is very charming, and most highly finished." Kugler thus describes this work, which he found in the Casa Aracœli, at Milan.

Is it really by Leonardo, and is it still at Milan? M. Charles Clément refers to a Madonna in the Litta Palace of the same city. "The Virgin," says he, "is seen in profile, as she inclines her head towards the Infant Christ. The drawing is of great beauty, and displays a grandeur, amplitude, and roundness, which are of a truly extraordinary character.

"The face of the Virgin is painted in a somewhat dry manner, denoting the influence of Flemish art.

"The authenticity of this picture has been contested, but it is nevertheless an admirable piece of painting."

Engraved in the selection of Fumagalli.

26.

THE VIRGIN WITH THE SCALES.

In the Gallery of the Louvre.

THE drawing of this picture is somewhat undecided; it has been supposed that it was painted by Leonardo during a period of depression. Waagen attributed it to Marco d'Oggione, while Passavant names Salaino as the probable painter; the catalogue of the Louvre, however, unhesitatingly gives it to Leonardo.

The name of this work was derived from the scales of the Last Judgment, which St. Michael is represented as offering to the Infant Jesus seated on the knees of His mother; but neither Mary nor her son appear to pay any attention to him, for they are occupied with watching the little St. John, who is toying with a lamb beside his mother, St. Elizabeth.

Engraved in Landon's "Vies et Œuvres des Peintres."

27.

THE HOLY FAMILY.

In the Gallery of the Louvre.

IN this the Infant Christ is seated on a cushion, his mother supports Him, and assists in taking a cross of reeds from the hands of the little St. John the Baptist.

Waagen, and after him Passavant, refer this picture to the Roman school; the former says, "That from its composition, its agreeable character, and the warmth of its colouring, which is slightly gloomy in the shadows, he recognizes a work of Pierino del Vago." At the Louvre, however, it is attributed to Leonardo.

28.

MATER DOLOROSA.

FUMAGALLI, in his "Recueil," gives the drawing for a bust of the "Mater Dolorosa." "It is," says Kugler, "of remarkable grandeur and nobility, and evidently is the design for a completed work." Where it is now to be found is uncertain.

29.

ASSUMPTION OF THE VIRGIN.

THIS picture is mentioned by il Padre Gattico, who, in a manuscript history of the Convent of Santa Maria delle Grazie at Milan, says that Leonardo painted over the door of the convent church an Assumption of the Virgin, which was executed on canvas; "there may be seen, in a glory formed by numberless little angels, St. Dominic and the Duke Lodovico Sforza on the one side, and on the other St. Peter Martyr and the Duchess Beatrice. The picture was in the form of a lunette; it was transferred to the sacristy in 1726, where it has been copied in fresco." All these details do not interfere with the fact that the authenticity of this picture has been doubted by the greater number of historians on art; they even insinuate that the Dominican Gattico,

GROUP OF THREE CARICATURE HEADS.

From a drawing in the Pitti Gallery, Florence.

in his too great anxiety to enhance the glory of his convent, has not hesitated to depart from strict truth.

30.

VIRGIN SURROUNDED BY SAINTS.

THIS is known to M. Millin only, who, in his "Voyage dans le Milanais," states that the church of the Brera possesses a Virgin by Leonardo da Vinci.

"She is surrounded by three bishops and a cardinal, the donor, his wife, and their children; two angels are placing a crown upon her head."

31.

THE VIRGIN OF POMMERSFELD.

COUNT SCHÖNBORN possesses in the gallery of his castle of Pommersfeld a Virgin represented with the Holy Child upon her knees, on a cushion. The Virgin is supported by a pedestal, and the Child points to a vase on a table.

Kugler says that this Virgin and Child are the portraits of a beautiful woman and her son known to Leonardo; but a little further on he attributes the picture to Solario.

On comparing the Virgin at Pommersfeld with the work numbered 1228 in the Louvre, known as the "Virgin of Andrea Solario," "there may be found," says Dr. Rigollot, "the same amiable expression in the faces, the same well-drawn forms, so fine and so rounded, and the same excellent fore-shortening of the limbs of the child with its softened contours, and the rosy tone of the toes and the elbows; one may recognize also the clear flesh tints, with their delicate blue half-tones and transparent shadows, though these last are rather dark, the beautiful blue colouring of the mantle, and the red dress with its white lights and orange shadows; in fact, in the soft work of the pencil, in the manner in which the colours are grounded and diffused, the handiwork of the pupil of Gaudenzio Ferrari may readily be discovered." This picture was at first attributed to Raphael, but wrongly; it is doubted whether it is more rightly referred to Solario.

Granted that this picture has a sufficiently original appearance to account for many copies having been made, it is nevertheless doubtful if it is the work of Leonardo. The features of the Virgin "with a short nose," the elaborate nature of the painting, and the superficial expression of her face, are not in any way characteristic of Leonardo da Vinci.

Among the copies which have been made of this Virgin of Pommersfeld, Waagen refers to a painting in the Gallery at Berlin; which is stated in the catalogue to have been painted after a composition by Leonardo.

32.

THE VIRGIN AND INFANT JESUS.

M. G. DE MOULINS, the owner of this picture, published, in 1848, a pamphlet "On the Illustrious Leonardo da Vinci and his immortal Works," informing us of its being in his possession, and that he was prepared to dispose of it on remunerative terms. He also affirmed in the same pamphlet that it had never been out of his family since the time when it was given to François de Moulins, who was Grand Almoner of France, and once tutor to Francis I., and died in 1535. Besides his own statement, he gives no other confirmation of the fact than a phrase from Félibien: "There is in the cabinet of M. de Sourdis a Virgin holding a little Jesus in her arms." This M. de Sourdis was a near relative and intimate friend of the De Moulins family.

The picture is painted on wood; the figures are larger than life size; the Virgin supports her cheek against the head of her Child, whom she holds upon her lap; she is clothed in a red dress, and a mantle of azure blue lined with orange silk falls from her shoulders; the Child is unclothed.

PART II.

SACRED HISTORICAL SUBJECTS.

33.

THE LAST SUPPER.

In the Convent of Santa Maria delle Grazie, Milan.

THIS, the greatest work of Leonardo, has already been so fully described in this volume (see page 31), that further notice is not needed.

Engraved by Raphael Morghen; Thouvenet; and many others. (*See Photograph of Raphael Morghen's Engraving.*)

Herr Passavant gives the following criticism on the copy at the Royal Academy:—"A copy in oils, by Marco Uggione, from Leonardo's celebrated painting in Sta. Maria delle Grazie in Milan, is of the same size as the original.

"The united efforts of ignorance and destruction having now rendered the splendid fresco a mere shadow of what it was, this copy by one of Leonardo's best pupils assumes a proportionate value. It is also in itself a fine performance, preserving the character of the heads most completely, all that is wanting being that delicacy of finish which particularly distinguished the original. The beauty of the old painting in this respect is further proved by the ten original heads which formerly belonged to the Ambrosian Library, and which are now in England.[1] They were purloined from the library during the period of the French revolution, fell into the hands of Sir Thomas Baring, and afterwards passed into the collection of Sir Thomas Lawrence, at whose sale they came into the possession of Mr. Woodburn, in whose gallery I had the advantage of seeing them. These ten heads are of extraordinary beauty, and in tolerable preservation; drawn in black chalk, with a

[1] Eight of these heads are in the Gallery of the Hermitage.

slight tint of colour, and altogether well worthy of the great master. It seems as if Leonardo had devoted his chief efforts to the heads, leaving the rest of the figure only slightly expressed. In the sloping, almost horizontal strokes, we recognize the peculiar signs of Leonardo's pencil, while the great delicacy of the drawing and perfect gradation of tone are incontrovertible proofs of his excellence. The copy now before us, by Marco Uggione, formerly embellished the refectory of the Chartreuse at Pavia, but was stolen during the troubles of the revolution by a Frenchman, who brought it to Milan, and having there taken up a sum of money upon it, absconded, and was no more heard of. In the meantime the picture remained unnoticed and unreclaimed till the year 1815, when the treaty of Paris being concluded and every nation striving to regain her own, this copy, for better security, was brought over and publicly exhibited in England. Sir Benjamin West, at that time President of the Royal Academy, made a most favourable report of its merits, but purchasers were few in number, and the Academy subsequently obtained it at a low price."

34.

ST. JOHN THE BAPTIST.

In the Gallery of the Louvre.

DR. KUGLER says, in his "Handbuch der Kunstgeschichte," that "this St. John, the portrait of Lucrezia Crivelli, and that of Mona Lisa, which are in the Louvre, can alone be regarded as thoroughly authenticated works of Leonardo's most brilliant period, since nearly all references relate either to these or to incomplete or missing works." If it were not for the cross in the hand of the saint, the radiancy of his face, the impassioned expression of his mouth and eyes, and the gesture with which he points towards heaven, it might lead one to mistake him for a Bacchus—he seems to be crying Evoe to Jupiter after his first vintage. The beauty of the modelling and the flesh-tones mingled with the shadows, which are almost opaque, the clear spaces brilliant with metallic-like reflection, are all characteristic of the hand of Leonardo.

Unhappily, the head alone has been left as he painted it; a number of retouches have defaced this *chef-d'œuvre*, this companion to the Mona Lisa.

The entire history of this picture is not known, but it is certain that

Louis XIII. made it a present to Charles I. of England, who, in exchange, gave him a portrait of Erasmus by Holbein, and a Holy Family by Titian. It is probable that Cromwell once had it in his possession. By a series of unknown adventures, Leonardo's painting fell into the hands of the amateur Jabach, from whom it was obtained for the Louvre. The Ambrosian Collection at Milan possesses a copy of this work.

35.

THE ADORATION OF THE MAGI.

In the Uffizj Gallery, Florence.

THIS was doubtless painted before Leonardo left Florence, about 1480, for the figures, above all that of the Virgin, are not of that type which he afterwards adopted at Milan.

His constant aim was to master the effects of light; he may claim to be regarded as the inventor of that difficult science which is called "chiaroscuro."

"This picture," says Rumohr, in his "Italienische Forschungen," "in which the distribution and composition are of a studied simplicity, in which the numerous persons are arranged in groups, bound together by skilful disposition of masses, and where all the figures, though placed in a common obscurity, are made visible by the reflections of feeble and broken lights, is the most complete example that Leonardo has left to painters who, like Fra Bartolomeo, have devoted themselves to the art of distributing light, and combining the composition of their pictures by the use of shade on shade."

Engraved in Rosini's "Storia della Pittura Italiana."

36.

BUST OF ST. JOHN.

THE Italian, Conca, mentions "a head of the youthful St. John in the palace of the King of Spain." Mengs speaks of a head of St. John the Baptist in his youth, as belonging to the Princess of the Asturias. These two are probably identical.

Félibien, in his "Entretiens sur les Peintres," says that "there was in the Hôtel de Condé, in the cabinet of M. le Prince, a head of St. John

the Baptist." It had been painted, he thinks, at Florence, about 1513, by Leonardo da Vinci, for a gentleman of the court of the Duke of Florence, called Camille degli Albizzi. Lanzi, who had seen many pictures of St. John the Baptist, says that they cannot be safely attributed to Leonardo.

Herr Passavant has not given any opinion, neither has Dr. Rigollot. It is probable, however, that Mengs was not deceived ; and considering the high eulogy that he gives to the picture of St. John the Baptist in the possession of the Princess of the Asturias, we may readily believe that Leonardo had a hand in " that grand study of chiaroscuro."

37.

ST. JEROME PENITENT.

In the Collection of Cardinal Fesch.

THIS is nothing more than a rough sketch, like the Adoration of the Magi. St. Jerome is on his knees in a grotto, with a lion by his side ; the head only of the Saint is finished.

38.

HEAD OF ST. JOHN.

At Milan.

HERR PASSAVANT says, in his manuscript notes, " The severed head of St. John is on a plate. The picture is very finely executed, but appears to have been done by a pupil of Leonardo's, after his design. It was found in the Ambrosian Collection at Milan. The lights in the hair are heightened by gold, which is not found on any other of the works of this master."

This head of St. John, which has been noticed by few critics, ought to be put among the most doubtful pages of the great book Leonardo has left us.

39.

PICTURES OF HERODIAS.

At Florence.

AN " Herodias " which has for a long time passed as the work of Leonardo

still exists in the Tribune of the Uffizj at Florence. It is now almost decided by all art-critics to be a masterpiece of Bernardino Luini, pupil and imitator of Leonardo, the greater number of whose pictures have been attributed to his master; and they are in many cases worthy of that honour. The Herodias of Florence is assuredly one of the most beautiful creations of art. The figures are half-length. Herodias seizes the head of the saint, which the executioner is bringing forward; a serving-maid is standing near.

There are in this picture an energy of expression and a skilfulness of workmanship which are very remarkable. The Royal Palace of Hampton Court possesses a picture of Herodias attributed to Leonardo da Vinci, but Dr. Waagen thinks that it is more likely to be the work of Beltraffio. There is mention also of an Herodias in the collection of M. Collot, formerly Director of the Mint, Paris, but this is a reproduction of the one at Hampton Court. "If it is not by Leonardo, it is worthy to be so," says a French critic. It is of a very clear tone, more transparent and fine than that of the copy at Hampton Court.

The catalogue of the pictures in the Imperial Gallery at Vienna attributes three pictures of Herodias to Leonardo da Vinci, but none of these three pictures are by the hand of the master. They are all the work of his school. It is difficult, however, to find the signature of any well-known pupil on them. Passavant thinks that one of these may be Cesare da Sesto.

In the Orleans Gallery there is a copy of the Herodias of Vienna, and the Dresden Gallery also possesses another, but in a bust only. No. 1227 of the Louvre is "Salome," the daughter of Herodias, by Andrea Solario. This has been often attributed to Leonardo, but it is certain that it was bought by Louis XIV., on the understanding that it was a work of Solario. It is one of the good pictures due to the influence of Leonardo. This, according to the "Notices des Tableaux recueillis en Lombardie," once belonged to Cardinal Richelieu.

Dr. Rigollot found at Amiens, in the collection of an amateur, a fine picture, having for its subject Herodias holding a dish, in which the executioner places the head of St. John the Baptist. An old woman, whose head is covered with a turban, responds with a gesture to the glances of Herodias; two figures are seen in the background. "This picture came from the sale of M. Lafontaine, who, it is believed, had it

from George IV., in exchange for some Dutch and Flemish pictures for which the king had a desire. According to the catalogue of the sale, it is believed that it once formed part of the collection of Charles I. It has been attributed to Leonardo, but wrongly.

At the Leeds Exhibition, in 1868, Colonel Markham exhibited a painting by Leonardo—"The Daughter of Herodias receiving the Head of St. John."

The picture in the Gallery at Florence has been engraved by Volpato and in Landon's Selection.

40.

SAINT CATHERINE.

LÉPICIÉ, in his "Catalogue des Tableaux du Roi," mentions a half-length of St. Catherine crowned with jessamine, and holding in her right hand an open book, the pages of which she is apparently turning with her left; she is accompanied by two angels, one of whom holds a palm, and the other her instrument of martyrdom. "This picture," adds Lépicié, "is vigorous in colour; the details of the draperies astonish us by their finish; Leonardo has left nothing neglected that may truthfully render the different characters of the materials which drape the principal figure." It is now at Compiègne, and the catalogue refers to it under the erroneous title of "The Holy Family;" it is numbered 139.

There are many St. Catherines attributed to Leonardo; among others one was formerly at Modena, in the gallery of the D'Este family. M. Rigollot mentions another at Milan, in the possession of the painter Appiani.

The Royal Gallery at Copenhagen flatters itself that it possesses the original of all the Saint Catherines attributed to Leonardo; Herr Passavant believes, however, that this is a vain assertion, and that the much-vaunted work is more probably by Luini.

Gault de Saint-Germain speaks of an original St. Catherine in Germany: he probably refers to the painting at Nuremberg which was engraved by H. C. Müller.

At the Leeds Exhibition of Works of the Old Masters, in 1868, a "St. Catherine and Two Angels" (from the Corsi Gallery, Florence) was lent by Mr. P. F. Howard.

41.

MAGDALENES.

VASARI possessed a drawing by Leonardo representing a Magdalene, the head of whom "was full of grace and expression." This drawing is now preserved in the gallery at Florence. Conca speaks of a "Magdalene with her hair falling loosely about her, which was found in the Cathedral of Burgos, and which skilful connoisseurs attribute to Leonardo." Lanzi mentions two pictures of the Magdalene as attributed to Leonardo, one at the Pitti Palace at Florence, the other at the Aldobrandini, at Rome; but believes that both of these are most likely the work of Luini.

Herr Passavant, in a notice referred to by M. Rigollot, says that the Magdalene of the Aldobrandini Palace was subsequently at Vienna, in the hands of the Counsellor Adamowich.

42.

SAINT SEBASTIAN.

In the Gallery of the Hermitage, St. Petersburg.

M. CHARLES BLANC has narrated the history of this picture in the "Gazette des Beaux-Arts" of the 15th of January, 1861. "It was," says he, "bought by the famous merchant Dubois, at Turin, towards the commencement of the Empire. Charged to compose a nucleus for a gallery by an Italian prince, he collected a vast number of paintings, and among them was this St. Sebastian, which he valued at a hundred thousand francs, as he declared it to be by Leonardo."

The Italian prince died young, his collection was sold, and the Saint Sebastian fell into the hands of the Chevalier Bistoli, who some time afterwards gave this painting in pledge, and it was, after his death, sold to M. Wolsey-Moreau, who exhibited it in Paris, where negotiations for its purchase and removal to the Louvre were opened; but in 1860, the Grand Duchess Marie, attracted by its beauty, induced the Emperor of Russia to buy it for sixty thousand francs, that it might be included among the collection at the Hermitage Gallery in St. Petersburg.

The Saint, tied to a tree by means of red and black ribbons, points with his left hand to an arrow which has pierced his heart, and with his right to an inscription. It is evident, as M. Charles Blanc remarks, that this is an emblematical portrait of some grand personage of Milan.

PART III.

CLASSICAL SUBJECTS.

43.

BACCHUS.

In the Gallery of the Louvre.

WAAGEN says that the landscape in this picture appears to him to be the work of Bernazzano, "who often painted backgrounds for Cesare da Sesto." He dwells "on the local tone, which is red, on the hardness of the contours, on the awkwardness of the gradations of shadow." Passavant, on the contrary, extols the head, the feet, and parts of the scenery, as being entirely beautiful; "the remainder," he says, "seems never to have been finished, and has suffered much," but he attributes the painting to Leonardo without any doubt.

All that can be said with any reasonable pretension to certainty is, that Leonardo painted this picture, but that inexperienced hands have tampered with the work in attempting to restore it.

Passavant truly observes that the vine-leaves and grapes are of a crude green colour which Leonardo has not employed in the rest of the picture; he believes that this "Bacchus" is really meant for St. John the Baptist in the Desert, and recalls the fact that in the church of St. Eustorgio, at Milan, there is a copy of this work which is there named St. John the Baptist.

It is not improbable that some purist, scandalized by the pagan expression of the Saint, was convinced that Leonardo intended his figure for a Bacchus, and most conscientiously added the vivid green vine-leaves and grapes. If so, this "Bacchus" is nothing more than a travesty of Leonardo's work.

M. Giuseppe Campori refers to a volume of manuscript poetry by Flavio-Antonio Giraldi, in the Public Library of Ferrara, in which he found a distich alluding to a "Bacchus" attributed to Leonardo. It runs thus:

"BACCHUS LEONARDI VINCII.

"Tergeminum posthac, mortales, credite Bacchum:
Me peperit doctâ Vincius ille manu."

Does this mean the Bacchus of the Louvre?

Gault de Saint-Germain, in his Catalogue, mentions this picture as being by some attributed to Lorenzo di Credi. But why not ascribe it to Leonardo without further discussion?

44.

HEAD OF THE MEDUSA.

In the Uffizj at Florence.

VASARI speaks of a Medusa as belonging to the Duke Cosimo de' Medici; and it is believed to be the same that is now in the Uffizj. It is a death-like head, of a fantastic yet realistic type, and marvellously drawn. The glassy eyes extinguish themselves in rolling in their orbits; the mouth is distorted with agony, and the hair, which seems bristling with horror, is composed of hideous green snakes, which Leonardo has rendered with an extreme fineness of touch; they extend themselves as if fearfully hissing, even as though they shrunk from the fatal breath that escapes from that terrible mouth. M. de Rumohr does not think that this famous head is really a work of Leonardo's youth, and believes that the picture at Florence is no more than a copy, painted towards the middle of the seventeenth century, of the Medusa mentioned by Vasari. Passavant remarks that the colour is more thickened than was usual with Leonardo. Notwithstanding these criticisms it is probable that the head in the Gallery at Florence is the same as that which belonged to the Duke Cosimo; it is evidently the work of a youth, incomplete, but bearing unmistakeable signs of the powerful touch of a master.

Photographed by Messrs. Alinari of Florence.

45.

VANITY AND MODESTY.

In the Barberini Palace, Rome.

PIRANESI and d'Agincourt have engraved an allegorical picture entitled "Vanity and Modesty," from a work attributed to Leonardo in the Barberini Gallery at Rome. The Giustiniani Collection contained a painting of the same subject, also ascribed to Leonardo, and in the Sciarra Palace at Rome there is a third representation of this allegory, of which M. Viardot says: "This picture is in a most elevated style, and its admirable beauty is such that it does not permit me to raise any doubts of its authenticity." It has, however, been doubted if any one of the three is really by Leonardo. That first mentioned is generally attributed to Luini, and is supposed to have been painted by him over his master's drawing; and that which M. Viardot refers to has also been attributed to Luini by Fumagalli; but M. Rumohr thinks it may be a painting by Salaï.

Engraved by Campanella; by Troyen; and in Landon's Selection.

46.

LEDA.

At the Hague.

THERE are more than one picture of Leda attributed to Leonardo; the chief is that at the Royal Gallery of the Hague. It is a beautiful composition, but has been subjected to many transformations and changes. Too pagan in character for some into whose hands it fell, this picture was re-named "Charity," and by a process as simple as barbarous, the nude portions of the figures were covered; in this disguise it was the glory of the Gallery at Hesse-Cassel, after which it was for some years at Malmaison, whence it was taken, no doubt by indirect means, to the Royal Gallery at the Hague, where it has been restored almost to its primitive state.

In this picture Leda is represented with a child on her arm, and one

knee on the ground, in the position of a person rising slowly; with her left hand she points to the twins, Pollux and Helen, who are emerging from the mythological egg; a child seated on the other side near a part of the shell appears to regard the principal group with great attention.

The scene passes on the banks of a river, where the grass is mingled with reeds; the river traverses the whole of the background: at one side extends a breadth of country strewn with towers, and on the horizon a chain of mountains lose themselves in clouds; to the left an amazon and two cavaliers gallop swiftly along on horseback.

M. de Rumohr has frequently spoken of this picture; he believes it was painted at Milan, on account of its violet tone and rather dingy flesh tints, which recall the painting of the portraits of the Duke and Duchess of Milan; but he finds certain defects in the treatment of the nude portions, which would seem to indicate the date of the picture to be more closely associated with Leonardo's youth.

Passavant says that the composition certainly emanated from Leonardo, "for there exists a drawing, published by Gerli, evidently intended as a sketch for it, but the picture itself, the drawing of which is heavy, is executed by one of his pupils."

Is this the Leda to which Théophile Gautier refers? "Singular to note," says he, "that Leonardo da Vinci, who possessed so profound a knowledge of the science of anatomy, scarcely ever painted a nude figure; for our part, we do not know any other example but the Leda; she is shown at full length in an equilibric pose worthy of the great and beautiful Grecian statues, to which, however, she bears no other resemblance, for Da Vinci, original in everything, draws his ideas from the source of nature alone. At the feet of Leda, which are noble and pure as if they were carved in marble, are two children playing among the shell-chips of their broken egg, the lovely offspring of the celestial swan; the young mother wears that expression of sprightly gaiety which is, as it were, the seal of Leonardo; her eyes sparkle with laughing malice beneath their lightly coupled brows, and the mouth is drawn back at the corners, creasing the dimples of the cheeks with sinuosities so soft, so voluptuous, and at the same time so arch, that her look is almost perfidious."

In the Royal Collection of England there is an original drawing in

pen and ink representing Leda standing beside a swan. Herr Passavant, in his notes, says: "This is a composition by Raphael; but it appears that Leonardo once possessed the drawing, or, at all events, his scholars made many copies of it. In the Borghese Gallery at Rome there may be seen an example of this; another was engraved at Paris, by Leroux, in 1835."

In spite of Passavant's positive assertion, the standing Leda is not by Raphael; perhaps, however, the great painter of Urbino may have made the original drawing, which is in England, after a composition of Leonardo's; it is known that in his youth Raphael studied at one time the cartoons of Leonardo and Michael Angelo.

Speaking of Michael Angelo, we must, according to Passavant, restore to him the sketch of Leda which was at Fontainebleau, and of which Lomazzo speaks; this last opinion of Passavant is perhaps more reasonable; the sketch, which is now at Berlin, bears the impress of Michael Angelo rather than that of Leonardo.

Engraved by Leroux.

47.

FLORA.

THIS picture once formed part of the collection belonging to Marie de' Medici; it was afterwards in the Orleans Gallery, at the sale of which it was bought by M. Udney, who re-sold it to the King of the Netherlands. It is finished with all the care usually bestowed on a portrait, and indeed it was for a long time, and not without reason, believed to be a portrait of Diana of Poictiers, or of one of the mistresses of Francis I.

The Dutch have given it the names of Frivolity or Vanity, for what reason none but a German professor of æsthetics can philosophically explain. The figure is simply a charming young woman holding a flower, with her right breast uncovered. In a catalogue of the pictures belonging to Charles I. of England, there is mention of a painting representing a half-length figure of a laughing woman holding a flower, which was referred to a pupil of Leonardo.

M. Passavant speaks of "an old copy, in which the entire figure is nude," and which was at Stratton, the residence of Sir T. Caring; he thinks it is the one indicated in the catalogue above named.

There is in London another picture of the same subject, also attributed by Dr. Waagen to Leonardo. The woman is clothed in a blue mantle and a blue-tinted white robe, and holds a flower in her left hand; her posture is charming; the head recalls the most beautiful of Leonardo's faces, and the execution is of great purity. "But," says Dr. Waagen, "the features are here of a particularly fine character: the delicate nature of the amber flesh tones, and, above all, the manner in which the colours are grounded, seem to proclaim this the work of Andrea Solario."

May not this last-mentioned example be the half-length laughing figure referred to in the catalogue of King Charles? It is now in the Gallery of the Duke of Sutherland, at Stafford House.

Another Flora attributed to Francis Melzi, and said to be designed by Leonardo, was a few years ago in the possession of Signor Lancelloti at Naples.

Lithographed by J. Linnell.

PART IV.

HISTORICAL SUBJECTS.

48.

CARTOON FOR THE BATTLE OF ANGHIARI.

(Battle of the Standard).

THE Battle of Anghiari was fought against Niccolò Piccinino near Florence, in 1440; it was by no means terrible, since but one man was killed in it, and even he, not from wounds received in the fight, but because he fell beneath the horses' feet and was trampled to death.

A special decree of the Republic had charged Leonardo to represent this battle in a large picture on the walls of the council chamber; he commenced his sketch in the hall at Santa Maria Novella, and made it of such large proportions that he was obliged to call in the aid of his engineering science in designing a machine to elevate and lower his work with ease. Vasari speaks of the cartoon with enthusiasm, above all extolling a group of cavaliers disputing about the possession of a standard or flag; but he says that Leonardo was forced to renounce his intention of painting the picture in oils, on account of the imperfect method then followed for the preparation of colours. In the "Carteggio inedito d' artisti dei secoli xiv. xv. xvi." by Doctor Gaye, we read that some parts of this work were indeed begun in 1504, that Leonardo was assisted by Raphael, Antonio di Biago, and by Ferrando l'Espagnol, and that so much as they then did was still to be seen in 1513.

The original design of Leonardo is lost. Passavant says that the group of soldiers engraved by Edelinck, after a drawing by Rubens, and that reproduced in Plate 39 of vol. i. of "L'Etruria Pittrice," are neither of them taken from the original sketch, which does not exist, but from a reduced copy believed to be the work of Bronzino, or from a drawing in the Ruccellai Palace at Florence.

The "Battle of the Standard" was engraved by Bertrand Edelinck.

PART V.

PORTRAITS.

49.

PORTRAIT OF LEONARDO.

In the Gallery of the Uffizi at Florence.

THIS portrait of Leonardo, painted by himself, is the one which is so well known through the engravings of Raphael Morghen, Campiglia, and others. He was sixty years of age.

Engraved also by Laquillermie. (*See Photograph.*)

50.

PORTRAIT OF LEONARDO (*drawn in profile*).

In the Royal Collection at Windsor Castle.

THIS was published in 1796, in a selection entitled "Imitations of Original Designs by Leonardo da Vinci, consisting of various drawings, published by Joshua Chamberlaine." The stippled engraving by Bartolozzi, in imitation of red chalk, is a profile. The countenance shines with a light which seems to come from on high; the head, of so beautiful a type in the original, is rendered with a singularly delicate exactitude. A copy of this is in the Ambrosian Library. It is said that this is the portrait of which Vasari speaks as in the possession of Francesco Melzi.

The Museum of the Louvre once contained a profile portrait of Leonardo, a drawing in red chalk which came from the collection at Modena. (*See Photograph.*)

51.

PORTRAIT OF LEONARDO. (*Full face.*)

At Venice.

IN the collection at the Academy of Fine Arts at Venice may be seen a superb head, almost full face, drawn in red, which is very probably a portrait of Leonardo in his advanced age. Bossi has engraved it in his "Cenacolo," and there is a copy in black chalk among the drawings belonging to the King of the Netherlands.

52.

PORTRAIT OF LEONARDO.

In the Esterhazy Gallery at Vienna.

THIS portrait represents Leonardo holding a letter in his hand, on which is written: "A Maria Ant della Torre Leonardo di Piero da Vinci manda il ritratto." It ought to be—A Marc-Ant. M. Viardot declares this portrait to be absolutely authentic; but Count Gallemberg has not even spoken of it in his work composed at Vienna in 1833, and published in 1834 under the title of "Leonardo da Vinci."

53.

PORTRAIT OF LEONARDO.

At Milan.

"THIS is indeed," says M. Viardot, "the beautiful and venerable head of the patriarch-artist."

It is drawn in profile on paper with red chalk, and may possibly be a copy of that in the Royal Collection at Windsor.

54.

PORTRAIT OF LEONARDO.

At Vaprio.

COUNSELLOR PAGAVI, in his manuscript memoirs, refers to a portrait of Leonardo painted by himself, as being in a house known as La Canonica di Vavro (or Vaprio), situated on the Adda.

This house belonged to the Melzi family, whom Leonardo often visited there, they being among his most intimate friends.

The old Canonica d'Aprio has resisted the destroying influences of wind and rain. There are, however, no traces of this painting discoverable therein. It has probably either perished or been removed elsewhere.

55.

PORTRAIT OF FRANCIS I.

IN this picture, which belongs to Mr. Pocock, the king is represented as St. John the Baptist.

The frame bears the date 1518. Leonardo had ceased to paint at the later period of his life, which this date would indicate; it may, however, have been added after his death.

Lithographed by Day and Haghe.

56.

PORTRAIT OF MONA LISA. (LA GIOCONDA.)

In the Gallery of the Louvre.

THIS masterpiece, which has been called "the despair of painters," is an enigma of beauty. It is a portrait of the wife of Francesco del Giocondo; and Vasari, although an Italian, and speaking in that flowery language, could not find terms sufficiently laudatory in which to express his enthusiasm.

Francis I. bought this grand work for 4,000 gold crowns of the

FEMALE HEAD, IN PROFILE.

From a drawing in the Royal Collection, Windsor Castle.

currency of his time, and equal to £20,000 of our present coinage. "La Joconde" might now be sold for that sum and yet be considered cheap.

After the "Last Supper," this is the most admirable work of Leonardo's that remains to us; but like it, it is a work which each day becomes more mysterious and more effaced. The background—a charming landscape, where the blue sea is bordered by picturesque mountains—is half invisible to our eyes, but we can yet contemplate this delightfully pure drawing, we can still admire these finely ideal forms so delicately rendered, we can still feel enraptured before the ineffable gaze of these lucidly dewy eyes; we can still, like the contemporaries of Francis I., fall into a dream before the infinitely mysterious smile; but where now are the warm tones and life-like flesh-tints, the vivid carnations that once enchanted Vasari? It is with difficulty that we can bring ourselves to be astonished now at the hands—"hands without parallel even up to our own time"—which are of irreproachable beauty in form, but the colour of which has almost vanished into night.

Félibien, whom modern critics seem to regard with disdain, but who will keep his place among art historians, had never seen anything more finished or better expressed than "La Gioconda." "It has so much grace, and such sweetness in the eyes and the features, that it appears almost living; and it seems to one who sees this portrait, that it is of a woman who takes pleasure in being admired." This is concisely and comprehensively written.

"The work of Leonardo is a marvel, a thing more divine than human." Thus spoke Vasari, and justly. In the presence of so wonderful a painting one endeavours to calculate the time that was consumed in its execution; it may be, one thinks, that the artist yielded to the fascination he so well displayed, and that he prolonged at pleasure the luxury of a *tête-à-tête* with this charming woman; it may be that he had, in fact, great difficulty in expressing the proud serenity and provocation contained in this face, the smile of which sometimes appears almost unearthly, and seems to magnetize us with its voluptuous attraction. We fancy that after having finished the drawing with much delicacy, and shaded it off into almost imperceptible obscurity, and having thus approached and then withdrawn, as it were, the artist had wished to follow into mystery his recoiling half-tints, to hide from our eyes in a veil of mist the lovely figure, until it appears at last as a dream

in the midst of a fairy land, surrounded by small blue rocky mountains, pointed sharply and carved in crystal, like stalactites reversed towards the sky.

The Royal Museum of Madrid possesses a copy of this portrait, in which the background is formed of a dark curtain. It is said that this copy is by Leonardo himself; but he rarely copied anything, much more his own pictures; moreover, this copy of Madrid is too well preserved to have been painted by Leonardo. There are others, in England, in Germany, and elsewhere, which are quite as beautiful as that at Madrid, but which are not from the hand of the master himself.

Passavant mentions two copies, "one which may be found in the Hermitage Gallery, and another forming part of the collection of Cardinal Fesch," in which Mona Lisa is represented unclothed.

Engraved by Fanchey; by Massard, and in Landon's Selection. (*See Photograph.*)

57.

LA MONACA.

In the Pitti Palace, Florence.

THIS half-length figure of a nun or young girl wearing a hood is of strange beauty and fascination, and shines vividly amid the many masterpieces which fill the galleries of the Pitti Palace.

It has been said that this is not the work of Leonardo, but of one of his scholars. Oltrocchi, however, suggests that it is a painting which is recorded to have been given in 1536 to Cardinal Salviati by a brother-in-law of Leonardo. It was found in the collection of the Marquis Niccolini, and, notwithstanding the doubt that has been expressed, those who see it feel that it is one of the most poetic creations of the master.

58.

PORTRAITS OF LODOVICO SFORZA AND HIS FAMILY.

IT was towards 1495 that Leonardo painted the family of Lodovico il Moro kneeling on a mountain, representing Calvary, which may still be seen in the Convent Delle Grazie at Milan; but while the landscape,

said to have been painted by Montorfano, is well preserved, the figures of Leonardo have vanished.

Vasari says that nothing was more beautiful than the heads of the young princes Maximilian and Francesco, who stood near their mother, the Duchess Beatrice. Now one can scarcely distinguish anything of these three figures, any more than that of the Duke Lodovico Sforza; the whole group is even more faded than the "Last Supper," which is on the opposite wall.

The mediocre work survives, the work of genius has perished. Would that Leonardo, the chemist, had been content with the common oils which Montorfano employed!

59.

PORTRAIT OF GIAN GALEAZZO SFORZA.

At Milan.

THERE is a three-quarter length portrait in the Ambrosian Library at Milan, representing the Duke while still in his youth. This, which has for a long time been thought to have been intended for Lodovico, is one of the best portraits by Leonardo. Passavant, in his "Kunstreise durch England," refers to a portrait of Lodovico Sforza drawn in black chalk, of great natural beauty, as preserved at Oxford; this also is attributed to Leonardo, but Passavant believes it to be "by one of his best pupils."

60.

PORTRAIT OF ISABELLA OF ARAGON, WIFE OF GALEAZZO SFORZA.

At Milan.

THIS portrait is also in the Ambrosian Library at Milan. It is a fine profile study, after the manner of Holbein or Van Eyck.

Dr. Burckhardt in his "Cicerone" says, "This profile picture is beyond all description beautiful and charming, and of a perfection in the execution which precludes the possibility of any artist but Leonardo."

61.

PORTRAITS OF THE DUKE MAXIMILIAN SFORZA.

TWO portraits of the eldest son of "Il Moro" are attributed to Leonardo; one is in the Ambrosian Library, the other in the possession of the Melzi family.

62.

PORTRAIT OF A WOMAN.

In the Royal Gallery at Augsburg.

THIS is surely a sister of Mona Lisa, a sister in artistic beauty and perfection, and in its presence, as in that of "La Gioconda," the eternal ideal of this great seeker after the perfection of female beauty seems nearly attained. The portrait shows her in full face; the mouth above all is of great delicacy and charm; the eyes appear to have been retouched, they have not their former expression; the hair and the breast are only sketched out.

63.

PORTRAIT OF LUCREZIA CRIVELLI. ("LA BELLE FERRONNIÈRE.")

In the Gallery of the Louvre.

LE PÈRE DAN, in his "Trésor des Merveilles de Fontainebleau" (1642), calls this a portrait of a Duchess of Mantua. M. Delécluze, in "L'Artiste," says that it is a portrait of Ginevra Benci. For a long time, and even now sometimes, it has also been named La Belle Ferronnière; but according to the most trustworthy historians, the mistress of Francis I., to whom tradition has given that name, was either dead or past an attractive age at the time of Leonardo's arrival in France.

Quite different from La Gioconda, but still as attractive in its somewhat stern placidity, is the portrait of Lucrezia Crivelli, which for so long passed for that of La Belle Ferronnière.

In the *Codex Atlanticus*, an autograph manuscript of Leonardo da Vinci, may be read three Latin epigrams on Lucrezia Crivelli, the mistress of the Duke Lodovico Sforza. It is known, moreover, that Leonardo on

arriving at Milan painted a portrait of this lady. The general opinion is, therefore, that this picture in the Louvre is really a portrait of Lucrezia, purchased by Francis I.

It is a beautiful figure, painted in the Florentine manner, before the Milanese type had become Leonardo's ideal. She is represented in three-quarters length, with soft silky hair, and a forehead encircled by a black band fastened with a diamond, thus giving cause for the popular name of La Belle Ferronnière. This beautiful head is full of light, and has an expression of pride mingled slightly with melancholy. The tone of colour is warm and brilliant, and the whole drawing tells of Leonardo in each of its soft, pure lines; the shadows, too, are warm and almost transparent. Dr. Waagen says that it is the most beautiful picture by Leonardo that the Louvre possesses.

Le Père Dan speaks of five pictures by Leonardo which he saw in the Gallery of Paintings at Fontainebleau:

"1. A figure of the Virgin with a little Jesus, who is supported by an angel, all seated in a pleasant landscape.

"2. St. John the Baptist in the desert.

"3. A half-length figure of Christ.

"4. The portrait of a Duchess of Mantua.

"5. The fifth in number but the first in value, a marvel of painting, is the portrait of a virtuous Italian lady named Mona Lisa."

No. 1 is unknown; No. 2 is the St. John the Baptist of the Louvre; No. 3 is mentioned in the catalogue of Lépicié, but is not now to be found; No. 4 is the portrait of Lucrezia Crivelli, and No. 5 is Mona Lisa, which the good father counts the first in value, as a work of marvellous skill.

Engraved by Bridoux; Lacroix; and in Landon's selection. (*See Photograph.*)

64.

PORTRAIT OF A YOUNG MAN.

In the Gallery at Florence.

BOTTARI believes that in this he recognizes a portrait of Raphael. The catalogue of 1655 declares positively that it is from the hand of Leonardo;

thus—"Ritratto in tavola di un giovane, di mano di Lionardo da Vinci."

According to Passavant, "the colours of this picture are laid on very thickly, and in this respect it resembles the head of the Medusa. It may probably be one of Leonardo's early works."

65.

PORTRAIT OF GINEVRA BENCI.

In the Gallery at Florence.

GINEVRA BENCI was a graceful and charming girl, the daughter of Amerigo Benci, who was Leonardo's landlord, and with whom was found a sketch for the picture of the Adoration of the Magi. Ghirlandajo and Leonardo were often inspired by the beauty and naïveté of the young girl. Ghirlandajo painted her portrait, among others, in the fresco that he executed for the church of Santa Maria Novella, towards 1484. Vasari says that Leonardo also painted her: "Ritrasse la Ginevra d'Amerigo Benci, cosa bellissima, ed abbandonò il lavoro a' frati."

This portrait of Ginevra was in the Niccolini Gallery; it was bought by the Duke of Tuscany, and by him placed in the Pitti Palace. It is a lovely work in Leonardo's first manner; it seems as though one could detect the caresses of the brush on those charming eyes, and lips that open with an arch smile—that smile which Leonardo so often gives to his women, even to his Virgins, to render them the more attractive. But this portrait has been "*cleaned*," and with the varnish many of the beauties of its first state have disappeared.

The historian of Italian painting, Rosini, is said to possess an original portrait of Ginevra Benci by Leonardo. It is a charming figure, in a pure style. He has given a representation of it, together with one of the portraits by Ghirlandajo, in his work called "Storia della pittura Italiana, esposta coi monumenti."

Palmerini has engraved a portrait under the name of Laura, which he believes to be also of Ginevra Benci and by Sandro Botticelli. The same portrait has been reproduced in 1824 in a Florentine edition of the works of Raphael Morghen illustrated by Palmerini.

66.

PORTRAIT OF CÆSAR BORGIA.

THIS portrait is spoken of by M. le Comte de Betz, who had seen it at Bologna in 1845, in the Corazza Collection. The Catalogue of pictures in this collection affirms that it is a portrait of Cæsar Borgia painted by Leonardo; but we know that the statements of catalogues must be accepted with reservations. M. de Betz, however, says that he fully recognized in this portrait, which is very beautiful, the manner of Leonardo, and that the eyes have been painted by no one else; they have that strange power of expression which he alone could give, and which retains one so long before his portraits.

67.

PORTRAIT OF AN OLD MAN.

At Windsor Castle.

THIS is a beautiful head of an old man, beardless, drawn with great delicacy and brilliancy. It is attributed to Leonardo. Passavant, however, doubts its authenticity.

68.

PORTRAIT OF CHARLES VIII., OR CHARLES D'AMBOISE.

In the Louvre.

THIS picture was at first designated a portrait of Charles VIII.; afterwards of Louis XII.; and now, on the authority of M. le Blanc, it is said to represent Charles d'Amboise, de Chaumont, Maréchal of France, and Governor of the Duchy of Milan. This favourite of Louis XII. died in 1511, at the age of thirty-nine; he entered Milan with the king in 1509, and it is suggested that this portrait was painted between that time and 1511.

Both Waagen and Passavant think that this portrait ought to be attributed to Jean-Antoine Beltraffio, one of Leonardo's best pupils. In 1846 Hillemacher published an etching of it, with the inscription, "Charles VIII, roy de France."

69.

PORTRAIT OF A MAN, FULL FACE.

In the Dresden Gallery.

THIS picture, which Jacob Folkema has engraved so well under the title of "Portrait d'un guerrier, vu de face," is, according to Lomazzo, the portrait of Giovanni Giacomo Trivulzio, painted after the battle of Agnadel, in which General Trivulzio, then sixty-four years of age, commanded the vanguard.

According to other critics this is a portrait of Duke Lodovico; according to Passavant, of Mr. Morett, goldsmith and jeweller to Henry VIII. of England. In support of this latter opinion, it is affirmed that Hollar engraved the picture in question in 1647 with Morett's name attached to it; it was then in the collection of Lord Arundel. It may be remarked that the Comte de Betz refers to a portrait in the Pitti Palace numbered 207, in the gallery called the Saloon of the Iliad, representing a man, which is attributed to Leonardo, and called "L' Orefice." May not this be the portrait that was engraved by Hollar? But if there is no agreement on the subject of the name of the personage represented in the portrait of the Dresden Gallery, neither is there any certainty with regard to the name of its painter, some declaring it to be by Leonardo da Vinci, others by Hans Holbein. M. Viardot, in his "Musées d'Allemagne," says that the merits of this picture are equal to those of La Gioconda; but other art critics incline to the opinion that it is more like the work of Holbein; and if it be a portrait of Henry the Eighth's goldsmith, they are probably correct.

70.

PORTRAIT OF A WOMAN.

At Antwerp.

M. RIGOLLOT says that he has seen this portrait in the collection of an amateur at Antwerp. It represents a woman seated, and a little less than half life-size. The owner of this picture attributes it to Leonardo, and believes it to be a portrait of a duchess of Milan or Mantua. He was so strongly convinced of its authenticity that he had refused to sell

it for 60,000 francs, and would not take less than 100,000. But M. Rigollot refrains from giving us his own opinion.

71.

PORTRAIT OF MARC ANTONIO DELLA TORRE.

At Milan.

MARC ANTONIO DELLA TORRE, professor of anatomy, was the master, the idol, and the friend of Leonardo. It is not then without reason that his portrait is said to have been painted by his great pupil. But can it be that the portrait preserved at the Ambrosian Library is that of the celebrated professor, who died of the plague in 1512? Nothing can prove this assertion, and, as Passavant says, "the picture is too feeble in design and drawing, the drapery too stiff, to allow of its being attributed to Leonardo; it is in oil, and has been entirely repainted."

72.

PORTRAIT OF A MAN IN RED.

In the Dulwich Gallery.

IN his "Kunstwerke und Künstler in England," Dr. Waagen speaks of this portrait, which is attributed to Leonardo, as being, in his opinion, the work of Beltraffio.

73.

HEAD OF A WOMAN.

In the Orleans Gallery.

AMONG the plates published by Conché, in 1786, under the title of "Galerie du Palais Royal," may be found a head of a woman after the Flora of Leonardo, and said to be by the same master. But the original of the "Head of a Woman" is really in the possession of Lord Egerton. It is attributed to Luini, that pupil of Leonardo who has so often deceived one into thinking his work the work of his master.

74.

PORTRAIT OF JEANNE D'ARAGON.

QUEEN JEANNE died in 1435, it therefore appears little probable that the portrait in the Doria Gallery, or that which has been discovered at Rome—both being attributed to Leonardo, on the authority of Amoretti—have any chance of being rightly named.

There is not much to confirm the opinion of Passavant, who asserts that the portrait in the Doria Gallery actually represents the Queen whose name it bears, and that it is also a copy of Raphael's picture in the Louvre, which he thinks was made by one of Leonardo's pupils, who had evidently taken care to give the face that "smiling expression peculiar to the school of his master." "The head is likewise," added he, "very well drawn, as much so as the rest of the picture is stiff in design and dry in colour." How far does this last observation prove this to be a copy by a pupil of Leonardo? Raphael was much younger than Leonardo; how then could he have painted the original portrait of Jeanne d'Aragon, who died before the former was born?

75.

PORTRAIT OF THE CHANCELLOR MORONI.

BUT little faith can be placed in the portraits of his contemporaries which are attributed to Leonardo; it is certain that the greater number are of questionable authenticity. Leonardo painted slowly and was choice about his models, not seeking for sitters beyond his patrons, except in the case of the most beautiful. There is mention of two copies of the portrait of Moroni; they represent, it is true, a personage clothed in the robes of a chancellor, but Geronimo Moroni was not appointed to the chancellorship by Duke Maximilian until after 1512, when Leonardo was no longer at Milan.

These two so-called portraits of Moroni are, the one at Parma in the hands of Count Sauritali, the other at Milan with the Duke Scotti Gallerati. The first came from the collection of the Duke Modena, and I believe it to be wrongly attributed to Leonardo. As for the second, there is no doubt of its being quite unauthentic.

76.

PORTRAIT OF A WOMAN.

LÉPICIÉ, in the "Catalogue Raisonné," speaks thus of this portrait—"Item.—A head of a woman in profile, commonly called 'La Belle Ferronnière.' She wears a 'toque' of red velvet, bordered with a kind of embroidery in gold, and finished off at the side by a row of pearls; a black veil is fixed to the 'toque,' and falls upon her shoulders. The dress is of some dark blue stuff. The profile is drawn with astonishing precision, and leaves nothing to desire in the finish of the execution." So says Lépicié of the "Belle Ferronnière." Is it really the original, or is it an improved copy? According to M. E. Soulié, assistant-keeper of the Museum at the Louvre, "this portrait is still preserved there, although but little valued, it being estimated in the inventory at 150 francs, and at the time of the last classification it was judged unworthy of a place among the *chefs-d'œuvre* of the Galleries." But the new catalogue, under the number 488, attributes this portrait to the school of Leonardo.

77.

A LAUGHING BOY, WITH A TOY.

A PICTURE bearing this title, and attributed to Leonardo, was sold in England, in 1801, to Sir William Hamilton for £1365. We can find no traces of this painting.

PART VI.

PICTURES LOST OR MISSING.

WE may now say a few words on the missing pictures of Leonardo da Vinci, some of which are of great importance and interest.

1.

A ROUNDEL.

(*Rotella del Fico.*)

VASARI narrates that Leonardo, while a youth, painted on a round piece of wood "reptiles and hideous animals, which had a most frightful effect." This is said to have been bought by the Duke of Milan for three hundred ducats; but it is entirely lost. (*See page* 7.)

2.

ADAM AND EVE.

VASARI refers to this sketch as belonging in his time to Ottavio de' Medici; it was a work of Leonardo's youth, which he had drawn in black and white with the brush, and representing Adam and Eve in the earthly Paradise. It was intended as a design for some tapestry for the King of Portugal.

3.

THE NATIVITY OF OUR LORD.

(*Probably an Altar-piece.*)

THE Duke of Milan, Lodovico Sforza, presented this to the Emperor Maximilian on the occasion of his marriage to Blance-Maria Sforza, the

duke's niece. It was one of the most beautiful of all the gems which the Emperor then received.

4.

AN ANGEL.

ACCORDING to Vasari, Duke Cosimo de' Medici possessed a figure of an angel painted by Leonardo da Vinci. "The angel comes towards you with uplifted arms, which show a most admirable knowledge of foreshortening, in the drawing from the shoulder to the elbow." What has become of this picture, probably the Archangel St. Michael? M. Rigollot says that after having been perhaps banished to some villa during the regency of the grand-duchesses of Tuscany, it was most likely sold by auction to a broker with the inferior works which were put away in the garrets of the Pitti Palace, and after having been restored, resold to a Russian or an Englishman.

Passavant, in his manuscript notes, says, "The Grand-Duke of Tuscany, having learnt all these circumstances, desired to buy this picture back again, but as the price demanded was excessive, he refused to make the purchase."

5.

TWO CHILDREN PLAYING WITH A LAMB.

THIS is what Raphael Mengs calls a "picture which is unfinished, but certainly in Leonardo's best style. Besides the merits of the chiaroscuro, there is a grace in the agreeable movements of the figures which recalls the manner of Correggio." Conca also mentions this work: "It is," says he, "a beautiful thing." Mengs had seen it in the cabinet of the Princess of the Asturias, and Conca says that it was in the Royal Palace at Madrid. May it not be the picture of the Aguado Gallery, described as "No. 341. Two children playing on a green sward enamelled with flowers?" This picture was bought for 4000 francs at the sale of that gallery in 1843, but by whom is not known.

6.

CONCEPTION OF THE VIRGIN.

THIS painting was found in the church of San Francesco at Milan, according to Lomazzo, who says, "The celestial character of virginity

imparted to the Madonna is much admired." It is said that this work is now in England. Professor Mussi formerly possessed the sketch for the head; it was in black chalk, touched with the pencil and heightened the lights. ("Leonardo da Vinci," von Hugo, Grafen von Gallemberg," pp. 225 and 230.)

Luini, perhaps, was the painter of the "Conception," the sketch for which belonged to M. Mussi. Vasari was deceived more than once: this makes it probable that Lomazzo was also.

7.

Virgin Suckling the Infant Jesus.

In the edition of Vasari's works published at Sienna in 1794 there is a note by G. della Valle: "There is a picture of the Virgin suckling the Holy Child, by Leonardo, in the church of Madonna di Campagna at Piacenza, which was bought by Prince Belgiojoso, but is now at Milan, in the collection of the Duke Litta Visconti Aresi." "The execution and the style of the picture," says Passavant, "is that of the school of Van Eyck, which appears to have had some influence over Leonardo during his residence in Milan. The work has been damaged, but retouched in parts. It was engraved in 1828 by Jacopo Bernardi." Lanzi speaks of a Madonna in the palace of the Belgiojoso d'Este family, "which certainly came from the hand of Leonardo." Perhaps this is the one of which Della Valle makes mention in the note above referred to, and it may be the same as that indicated by l'Anonyme de Morelli, who saw at the house of Michael Contarini, at Venice, in 1543, a picture of the Virgin suckling her child, by Leonardo da Vinci.

Waagen says, "There is a little oval picture of the same subject at Blenheim Palace, in which the Virgin has a sad expression, though full of nobility. This work is treated with much delicacy, but has been greatly defaced; it is attributed to Leonardo, yet I think it must be the production of Beltraffio." ("Kunst und Kunstwerke in England," v. 2.)

8.

Neptune.

Vasari mentions that in his time, Messer Giovanni Gaddi possessed a drawing by Leonardo representing Neptune surrounded by sea-gods. This drawing was made for Antonio Segui, and is also missing.

9.

POMONA.

ACCORDING to Lomazzo, there was at Fontainebleau a picture of Pomona, which was said to be by Leonardo. It was especially famous for the execution of the triple veil with which she is covered.

It is not known what has become of it, for there is no mention of such a work in the catalogues of the various royal galleries of France.

10.

VIRGIN OF PARMA.

LANZI says that this picture, which he saw at Parma in the house of Count Sanvitali, was marked with the monogram L. V., and, according to Gallemberg, one may read: "Leonardo Vinci fece, 1492." It represents the Virgin, the Holy Child, St. John, and St. Michael the Archangel. What has become of this work, the authenticity of which appears certain?

11.

PORTRAIT OF CECILIA GALLERANI.

CECILIA GALLERANI was a mistress of Lodovico Sforza, and married Count Pergamino; but history, or a chronicle, affirms that the duke did not cease to love her on that account. Leonardo painted her portrait when he was at the court of Milan; and poets made sonnets in honour of the duke, his mistress, and, above all, of the painter. The Florentine Bellincioni is distinguished among all the others by his poetic laudations. Of all this, however, there remains no more than the doubtful copies of the portrait and the sonnet by Bellincioni. It is said that the original portrait of the beautiful Cecilia was, during the last century, in the possession of the Marquis Boursane at Milan. But where is it now? There was formerly an ancient copy at the Ambrosian Library; and in the Pinacothek at Munich there is a Saint Cecilia which had previously been the property of Professor Franchi, and passes for a copy by one of Leonardo's pupils of the very un-saint-like Cecilia Gallerani. There is also a second original portrait of Cecilia, preserved by the Pallavicini family of San Calocero, and painted at the height of her glory.

12.

MADONNA OF THE ROSE.

LEONARDO painted this Madonna for the same mistress of Lodovico Sforza. In it the Virgin is represented urging the infant Jesus to bless a rose. Perhaps this is an allegory, a madrigal in painting; and this rose may be emblematic of the beautiful Cecilia. Why not? In the time of the Duke Lodovico, the sacred and profane went hand in hand.

The "Madonna of the Rose" might have been seen at the house of a wine merchant named Giuseppe Radici; but it is strange that from the duke's palace it should have passed behind the counter. At what time, and how far has it gone now? It is reckoned as one of the most marvellously executed of Leonardo's pictures; the frame bears the following inscription: *Per Cecilia, qual te orna, lauda, e adora, El tuo unico figliolo, o beata Virgine, exora.* A canon of Milan named Foglia possesses a copy of this Madonna.

Rio says that a portrait of Cecilia Gallerani, as St. Cecilia, was at Milan, in the possession of Professor Franchi, and that another was preserved by the Pallavicini of San Calocero.

13.

TEN FIGURES OF AGED PEOPLE.

ACCORDING to M. E. Soulié, a manuscript inventory made in 1709 or 1710, by Bailly, keeper of the King's pictures, refers, among others mentioned by Lépicié, to "a picture by Leonardo da Vinci, representing eight figures of men and women at half-length, surrounding the figures of an old man and woman apparently caressing one another; all of about 54 centimetres in height, on a surface 90 centimetres in width, painted on wood in a gilded frame." This picture is not now to be found in any French gallery.

14.

BUST OF A SAINT.

M. DE CHENNEVIERES has informed us that "in the catalogue of the pictures of M. Crozat, Baron de Thiers, which were sold to the Em-

press of Russia, there is mention of a *Buste de Saint* attributed to Leonardo."

15.

MADONNA DELLA CARAFFA.

THIS is known to us principally from the praises which Leonardo has bestowed upon it, speaking with enthusiasm of the vase containing flowers sprinkled with dew, "so fresh that one could believe them the work of nature."

This picture is one of those painted during Leonardo's youth, before he had quitted Florence; it formerly belonged to Clement VIII., and was once in the Borghese Palace at Rome—whence it has disappeared since 1846. D'Argenville, in his "Vies des Peintres," says it was at the Vatican.

16.

THE VIRGIN AND CHILD.

A PICTURE thus designated is mentioned in the historical and chronological catalogue of the works collected at the National Dépôts for French Antiquities, by Alexander Lenoir, as a work of Leonardo da Vinci; it is numbered 7 in the list addressed to the Committee of Public Instruction, with the following note appended: "Originally the property of some Dominicans, afterwards transferred to the Museum; it represents the Virgin and Jesus, and is painted on copper, silvered by a preparation much used among artists of the Florentine school, but which has the disadvantage of causing the painting to turn black and peel off after a certain time; of this the picture we are speaking of is an example."

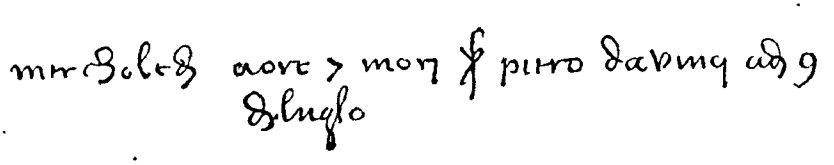
17.

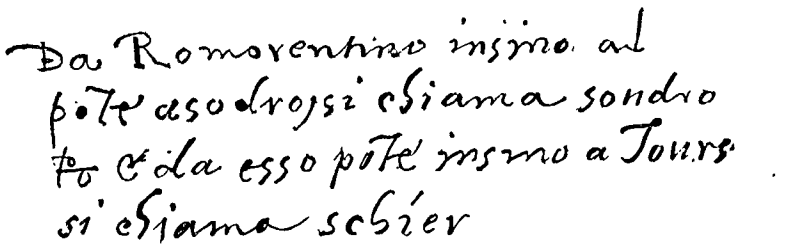
MADONNAS AT FLORENCE.

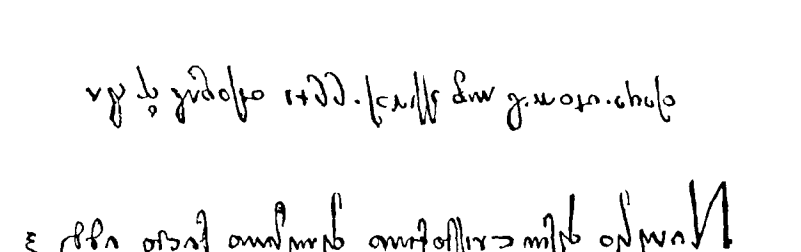
ACCORDING to Gaye and Bottari, Leonardo painted two Madonnas when he was at Florence, and these were said to be almost finished in 1507; they are now apparently lost.

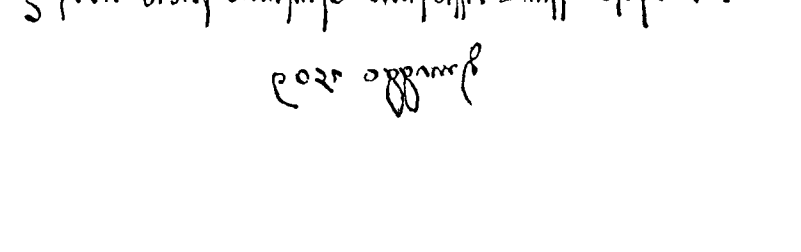
FAC-SIMILE OF HAND-WRITING OF LEONARDO.

.6. Qual studio debb' essere nei giouani,
Lo studio de giouani ch' giuale desiderano de prosfettonar
si nelle scientie ch imitatrici di tutte le figure de l'opere cli
Natura debbono essere circhi' disegnio accompagnati
da l'ombre, e' lumi conuenienti al sito dove tali figure
so' collocate. sono meglio due Regole colle quale si hanno da gouernare quelli
che vogliono imparare









DRAWINGS AND SKETCHES.

THERE are several collections of drawings by Leonardo da Vinci. The most important are in the Ambrosian Library, Milan; the Gallery of the Louvre, Paris; the Royal Gallery, Florence; the Albertina Gallery, Vienna; the Academy, Venice; the Print Room, British Museum; the Royal Library, Windsor Castle; Christ Church College, Oxford; the Duke of Devonshire's Library; the Earl of Warwick's Collection; and that of Mr. Malcolm, of Poltalloch.

THE AMBROSIAN LIBRARY, MILAN,

Contains, among the more important drawings, the following Twenty-four Subjects selected from the "Codice Atlantico" to illustrate the SAGGIO DELLE OPERE DI LEONARDO DA VINCI.[1]

1. Fac-simile of the autograph letter sent by Leonardo to Lodovico il Moro, about 1483.
2. Rough sketch and map of Milan and its environs.
3. Various machines for raising water.
4. A canal with sluices and weirs, and details of same.
5. Plan for excavating and embanking a canal, with long MS. details.
6. Coloured sketch for delivery of water from the canal of S. Cristoforo.

[1] Milan, 1872.

7. Sketch map of the Red Sea and the Mediterranean with MS. notes as to their respective levels.

8. Construction of military bridges, with various details.

9. Military bridge with details of knots; sketches of *balestre;* fish-traps.

10. Details of windlasses, with varieties of toothing, and palls.

A stone-thrower of unusual size.

11. Rough sketch, and finished drawing of a stone-throwing machine worked by a tread-wheel.

12. Machine for raising heavy bodies, such as a stone column.

Device for flinging down scaling ladders raised against a wall.

13. Numerous details of machinery for transferring vertical and horizontal motion.

Machine of uncertain use, possibly a scheme for a *mitrailleuse.*

14. Machine for cloth-dressing, and details of same.

15. Machine for cutting marble, with numerous details and notes.

16. Projects for aërial machines; parachute; lamps; turning-lathe.

17. Machine to regulate the shape of iron bars to be used for cannon.

18. Designs for artificial wings, with MS. explanations.

19. Drawings referring to experiments on attrition.

20. Machine for throwing silk.

21. Details of clockwork, with new kind of escapement.

22. Hydrographic map of the Loire and its affluents; kneeling female; male head; geometric measurements.

23. Balestra, or stone-thrower, mounted on wheeled carriage.

24. Sketches of the equestrian statue of Sforza, and case for transporting same.

IN THE LOUVRE, PARIS.

Among the more important are—

Head of a Young man, in profile, wearing a leather cap. A highly-finished pen-and-ink drawing, washed with ink; engraved by M. Caylus.

Head of a Child, profile, and slightly turned to the left, in pencil, and heightened with white on pale green paper. This has served as a study for the infant Jesus in "La Vierge aux Rochers."

Head of a young Man, in profile, turned towards the right, with a

HEAD OF A MAN, IN PROFILE.

From a drawing in the British Museum.

crown of oak-leaves wreathed among his hair; finished with silver point and black lead pencil on prepared paper.

Head of an Aged Man, three-quarters, and turning towards the left. In red chalk; engraved by Caylus.

The Bust of a Young Man, three-quarters, turned towards the right; with luxuriously abundant hair. In red chalk.

Head of a Woman, nearly full face, with glance directed towards the left. Above, to the right, a profile of a young man. In silver point, on paper tinted with pale blue.

Bust of a Woman, full face, looking towards the right. Drapery surrounds the head, and forms, in its fall, a knot on either side. In silver point, washed and heightened with white on sea-green tinted paper.

Study of Drapery, enveloping the lower part of the body of a person in a sitting posture. Painted in black and white on fine canvas.

Portrait of a Young Woman, life-sized, seen to the bust. The head is in profile, and turned towards the right; the hair is waved, and falls upon the shoulders. The bust, in three-quarters, is covered with a shining robe with large sleeves; the right hand reposes on the left arm. This sketch, which has been executed with great care by the master himself, is drawn in black lead and red chalk, heightened by touches of pastel. It was formerly in the Calderara Pino Gallery at Milan, and also in the Vallardi Collection, and was acquired at a public sale in 1860, for 4200 francs.

Study of the Virgin, for the picture of the Holy Family, representing the Virgin seated on the knees of St. Anne, in the Louvre. Drawn in black lead, and washed with Indian ink, and heightened with white on paper slightly tinted with bister. Octagon in form.

A beautiful drawing, which, however, appears to have been entirely retouched by the hand of some modern master. It was in the collection of Sir Thomas Lawrence, and numbered 182 *in the Catalogue of the sale of that belonging to the King of Holland, but was afterwards obtained through Mr. Samuel Woodburn, at the price of* 750 *francs.*

IN THE ROYAL GALLERY, FLORENCE,

There is a large collection, most of which have been photographed by Alinari. Among them are—

A Dragon attacking a Lion.

Portrait of a Man with curling hair, profile.
Female Head with jewelled head-dress, profile.
A Mother and Child with a Cat.
Female Head, in profile looking to right.
Portrait of a Man wearing a cap, profile.
Study for Drapery of a kneeling figure.
Female Head, full face. Head of an Old Man, full face.
Study for Drapery of a seated figure.
Study of the Head of Mona Lisa.
Study for Drapery of a standing figure.
Head of a Man crowned with laurel, profile.
Female Head, three-quarter face.
Study for La Belle Ferronnière. Study of a Hand and Fore-arm.
Head of a Man, full face, with Leonardo's handwriting.
Three grotesque Heads of Old Persons.
Anatomical Studies, five sheets (one, David slaying the Lion).
Two Knights on Horseback and four Foot Soldiers.

IN THE ALBERTINA GALLERY, VIENNA.

The Visitation. Head of Christ.
Head of St. Anne. Head of the Virgin.
Ascension of Mary Magdalene. Head of a Monk.
Head of an Old Man. Portrait of Savonarola.
Caricatures (two sheets). Study of Two Horses.
Study of Drapery. Seven Studies of Heads.

IN THE ACADEMY OF THE FINE ARTS, VENICE.

There are thirty-three drawings by Leonardo in this collection: among the principal subjects we find—

A portrait of Leonardo, with a large beard.
A Head of Christ (small), bowed down and crowned with thorns.
A Sketch for the St. Anne of the Louvre, very charming.

Three Dancing Figures, after the antique.

A sheet of caricatures, among which may be traced those of Francis I., Savonarola, and some Florentine Poets.

Studies of the Infant Jesus, smiling at His Mother, while he is caressing a Lamb.

Sheets of Figures showing the proportions of the human body.

A sheet of Flowers, drawn from nature, and highly finished.

A rough Sketch representing cavaliers fighting with foot soldiers, among whom are some skeletons—probably studies for the cartoon of the "Battle of Anghiari."

IN THE BRITISH MUSEUM.

Head of a Man in profile. Drawn with silver point on blue paper.

Head of a Man, full face. Highly-finished pen drawing on blue paper, heightened with white.

A Sheet containing three Caricature Heads.

Aged Men and Women, two drawings. Grotesques.

Study of a Virgin and Child and Cat and other compositions (three sheets).

A Group of Monsters with figure of a man holding a shield.

Slight sketch of Horsemen.

A sheet representing various engines of war; with handwriting.

Head of a Man in profile. Red chalk drawing on white paper.

Nude Figure of a Young Man holding a staff.

Virgin and Child, the latter with his right hand raised as in benediction. Pen drawing, heightened with white, on green paper.

A Woman and Child and three profiles (two sheets).

Study of a Skull of a Horse.

IN THE ROYAL COLLECTION, WINDSOR CASTLE.

There are several portfolios of drawings by Leonardo, of which the following are the most noteworthy.

Leonardo's own Portrait.

Head of Woman, full-face.

Profile of a Youth.

Head of a Man with a malignant expression.

Study for the St. Anne.

A beautiful Youthful Head with a longing expression.

Study of a Male Head in red chalk.

A Profile Head of a Child.

A Male Head, with large and noble features.

A page of studies of numerous Profile Heads.

First outlines of a Virgin and Child and St. John.

Beautiful Male and Female Profiles (on reverse of above).

Four Caricatures, and a Head wreathed with oak-leaves.

A young Girl in profile. On blue paper with silver point.

A Female Head, three-quarter face. Similar style to foregoi.

A Youth resting on a Spear, and pointing forward with one hand.

Part of a Male Figure, in red chalk.

Various Skulls, two entire and two divided.

A beautiful Youth in profile. Slight pen drawing.

A Knight in full gallop, an Archer, and a War Chariot.

A sheet of Elephants and Horsemen.

A Horseman in an animated attitude in full gallop. Probably a study for the Sforza monument.

A sheet of studies of Oxen and Asses.

Studies of Horsemen, and a Man on foot below. Probably a study for the celebrated cartoon of the "Combat of Horsemen."

Neptune restraining his Sea-Horses.

Two studies of Horses.

Sketch for the Monument of Francesco Sforza.

Studies of Horses.

Four drawings of St. George and the Dragon.

Various designs for the Sforza monument.

Dogs and Cats Fighting.

Various Landscapes.

A youthful Figure seated; a Prisoner in rags.

A sheet of studies containing two groups of the Virgin and Child and St. John, and two versions of St. John and the Lamb.

A sheet of studies of a Mother and Child, a Child with a Cat, two Children with Cats, and two Children embracing.

FEMALE HEAD, THREE-QUARTER FACE.

From a drawing in the Royal Collection, Windsor Castle.

A drawing of a Hand.

Study for the foreshortened foot of Pomona in the picture by Francesco Melzi, at Berlin.

A sheet of excellent studies of Hands for the Mona Lisa.

Study for the Drapery of a Kneeling Figure.

Study of a Sleeve.

Various studies of Foliage.

Studies for the Coiffure of Leda.

Study of an old Camel.

A number of Men raising a ponderous Weight.

Two Heads, on tinted paper.

An Allegory.

Speaking of this magnificent collection of drawings, Herr Passavant says, "Three volumes of Original Drawings, a selection from which, entitled 'Imitations of Original Designs, by Leonardo da Vinci, in his Majesty's Collection,' was published by John Chamberlaine in 1796. . . . These drawings by Leonardo are sketched either in red or black chalk, or in pencil upon tinted paper. Some are drawn with the pen; but only a few in water colours or heightened with white. Among the portraits, his own, taken in profile, is the most interesting, drawn with red chalk, two-thirds the size of life. In Bartolozzi's print from this drawing the fine intellectual expression and fire of the eye is but feebly rendered. Generally speaking, his dotted engravings give no adequate idea of this kind of drawing. The other drawings represent a variety of subjects: figures, caricatures, horses, and other animals, with some fine anatomical studies of these latter. A small sketch, also, of an elephant battle, spiritedly drawn on red chalk; added to these, several designs for optics, hydraulics, and perspective; a foundry, with all kinds of military machines, and a drawing showing the effects of a bomb which is bursting in a tower; maps of the country, following the course of different rivers—one of the Arno, another of the Vallambrosa, and the country between Volterra and Livorno; the effects of an inundation, as drawn at the time from nature; sketches of mountains, plants, &c., which he introduced into his paintings; also the plan for some work, explained by sketches of the subject. Besides these, in this general workshop of the Muses, we also meet with MSS. of music, the meaning of each note

given beneath in Leonardo's own hand. Lastly, a number of pen drawings of anatomical subjects, with an explanatory text, which, according to this master's usual method, is written from the right hand to the left. These sketches belong to 'A Treatise on Anatomy,' and formed one of the thirteen books which the Chevalier Melzi, the friend who accompanied him to France, compiled from his effects after his death. Three of these numbers fell into the possession of Pompeo Leoni, sculptor to the King of Spain, one of which, with a gilt inscription, 'Disegni di Leonardo da Vinci restaurati da Pompeo Leoni,' was probably purchased by the Earl of Arundel in 1636, at the time when this nobleman was ambassador from Charles I. to the Emperor Ferdinand II. of Austria. This book, and the portrait by Holbein, were found, upon the accession of George III., in Queen Caroline's room at Kensington Palace."

AT CHRIST CHURCH COLLEGE, OXFORD.

Virgin and Child; half-length, half-life size.
Two sheets of Allegories.
A sheet of studies for a Machine.
Horseman and Prostrate Figure.
Studies of Crossbows. (On reverse of above.)
Lodovico Sforza, a fine portrait. In black chalk, life size, but probably by a scholar of Leonardo's.

AT CHATSWORTH (DUKE OF DEVONSHIRE'S).

Head of a Madonna. (Study for "La Vierge aux Rochers.")
Portrait of a Florentine Youth.

EARL OF WARWICK'S COLLECTION.

Study of a Head of the Virgin; in black chalk.

MR. MALCOLM, OF POLTALLOCK.

Head of a Warrior; silver point on prepared ground.
Study of a Head, resembling that of St. John in the Last Supper.
Head of a Man shutting his eyes, as if dazzled by a brilliant light.
A sheet of studies of Five Caricature Heads.

A LIST OF PAINTINGS AND DRAWINGS BY LEONARDO, MENTIONED BY DR. WAAGEN IN HIS "TREASURES OF ART IN GREAT BRITAIN."

IN the British Museum.—A Collection of Original Drawings, described on page 287.

In the National Gallery.—Christ Disputing with the Doctors. (Probably by Luini.)

In the Royal Academy.—Cartoon. The Virgin seated in the lap of St. Anne.

The Last Supper. Copy by Marco Oggione.

In Lord Ashburton's Collection.—The Virgin, Infant Saviour, and St. John, with attendant Angels. This beautiful composition was formerly in the apartments of the Escurial, and came to England in the Collection of General Sebastione.

In the Holford Collection.—A Study of the Head of the Virgin in "La Vierge aux Rochers." (Small size, in brown, on panel.) In this picture the features have the refined feeling which belongs to Leonardo alone.

At Gatton Park (The Countess of Warwick's).—La Vierge au bas-relief. Purchased by the late Lord Monson.

In Mr. Danby-Seymour's Collection.—Mona Lisa, a copy.

La Belle Ferronnière, a copy. (? by Beltraffio.)

In Mr. W. A. Mackinnon's Collection.—St. Catherine. (Ascribed to Leonardo, but probably by one of his pupils.)

In Earl Brownlow's Collection.—Mona Lisa, Replica of. A very delicate and beautiful example on panel.

At Hampton Court Palace.—Herodias' Daughter with the Head of St. John the Baptist.

The Royal Collection, Windsor Castle.—Three Volumes of Drawings, the most important of which are given on page 287.

At Christ Church College, Oxford. (General Guise's Collection.)—A Collection of Seven Drawings, described on page 290.

At Basildon Park (James Morrison's, Esq.)—Flora. From the collection of Sir Thomas Baring.

At Charlton Park (Earl of Suffolk's).—La Vierge aux Rochers. (Most probably the original.)

At Stourhead House (Hoare Collection).—The Holy Family. Painted on parchment.

At Leigh Court (Sir W. Miles's).—Salvator Mundi.

At Thirlestaine House (Lord Northwick's).—The Virgin and Child (the Virgin standing). Ascribed to Domenico Ghirlandajo, but more like Leonardo.

At Chatsworth (Duke of Devonshire's).—Portrait of a Florentine Youth. (Most probably a portrait by Beltraffio.)

At Wooton Hall (Davenport Bromley Collection).—The Virgin and Child, the latter holding a violet. Landscape with Lake of Como in background. (Called Luini, but most probably Leonardo.) From the Feschi Gallery.

At the Fitzwilliam Museum, Cambridge.—La Vierge au bas-relief, a copy. *Two children playing on a greensward enamelled with flowers.*

At Glendon Hall (Booth Collection).—A Lucretia.

At Holkham Hall (Earl of Leicester's).—MSS. entitled "Libro originale della natura, peso e moto delle acque, di Leonardo da Vinci, in tempo di Lodovico il Moro, nel condur che fece le acque del naviglio della Martesana dell' Adda a Milano."

At Lord Yarborough's.—St. Anne. Copy, probably by Salaino, of the picture in the Louvre.

In Mr. Barker's Collection.—Leda with the Swan. Copy, probably by one of the scholars of Leonardo.

In Lord Kinnaird's Collection.—La Columbine. Formerly in the Collection of the King of Holland.

List of Paintings and Drawings by Leonardo da Vinci, which have been Exhibited in England during the past Twenty Years.

AT THE MANCHESTER EXHIBITION, 1857.

	The Property of
La Vierge aux Rochers, . . .	*R. S. Holford, Esq., M.P.*

AT THE LEEDS EXHIBITION, 1868.

Daughter of Herodias Receiving the Head of St. John, ...	*Col. Markham.*
Female Portrait, ...	*C. E. Legge, Esq.*
Female Head, ...	*Sir T. W. Holburne, Bart.*
Portrait of a Girl, ...	*Duke of Devonshire.*
St. Catherine and Two Angels (from the Corsi Gallery, Florence), . .	*P. F. Howard, Esq.*
Study of a Head, resembling that of St. John in the "Cenacolo" (silver point, and bistre-wash on grey ground), .	*J. Malcolm, Esq.*
Profile Bust of a Warrior (silver point on prepared ground), ...	*J. Malcolm, Esq.*
Bust Portrait of a Man in a Cap (black chalk), ...	*University Galleries, Oxford.*
Study of Two Heads, A Mother and her Child, ...	*Duke of Devonshire.*
Studies of Two Heads, one of Dante, .	„ „ „
Caricatures, Pen Drawing in bistre, .	„ „ „
A Man's Head in red chalk, . .	„ „ „

AT THE EXHIBITIONS OF WORKS OF THE OLD MASTERS, AT THE ROYAL ACADEMY.

	The Property of
A Head of Christ (Crayon), . . .	*The Baroness North.*
A Head of St. Peter (Crayon), . .	„ „ „
Christ Bearing his Cross (Panel), . .	*Sir T. Proctor Beauchamp, Bart.*
La Vierge aux Rochers, . . .	*Earl of Suffolk.*
St. Ann (Cartoon), ...	*The Royal Academy.*
The Virgin and Child, ...	*Duke of Buccleuch.*
Portrait of a Young Man, . . .	*W. Fuller Maitland, Esq.*
The Last Supper (Copy by Marco Oggione), ...	*The Royal Academy.*

PICTURES BY LEONARDO SOLD BY AUCTION.

THE following Paintings, attributed to Leonardo da Vinci, have been sold by Auction in England and on the Continent during the present century. Compiled from Séguier's List.

1801.

Mona Lisa. Purchased by the Earl of Bessborough for £51 15*s.*

Six Cartoons of Heads in the "Last Supper." Purchased by Sir William Hamilton, £36 15*s.*

A Laughing Boy, with a Toy in his Hand. Purchased by Sir William Hamilton, £1,365.

Six Cartoons of Heads in the "Last Supper," from Sir William Hamilton's sale. Purchased by Mr. Slade, £22 4*s.*

1802.

Virgin, Infant Saviour, and St. John. Purchaser not stated, £162 10*s.*

La Columbine. (From the Orleans Gallery.) Purchased by John Udney, Esq., £105.

1803.

Virgin and Child. Purchased by Walsh Porter, Esq., £840.

1804.

Virgin and Child. Purchased by — Boxellis, Esq., £178 10*s.*

1805.

The Daughter of Herodias receiving the Head of St. John. (From the Barberini Palace. This is probably the picture now at Hampton Court.) Purchaser not stated, £1,008.

1806.

The Virgin, Infant Saviour, St. John, and St. Elizabeth. Purchased by the Marquis of Lansdowne, £194 5*s.*

1816.

Saint John. Purchased by Henry Hope, Esq., £129 3*s.*

1819.

The Virgin and Child. Purchased by John Knight, Esq., £115 10*s.*

1827.

The Infant Christ and St. John seated on two cushions. Purchaser not stated, £106 1*s.*

1829.

La Columbine. (From the Orleans Gallery.) Purchased by John Udney, Esq., £105.

1836.

Salvator Mundi. Purchased by John Parker, Esq., £100.

1838.

The Infant Saviour seated in a Cavern, and pointing to a Red Cross. (From Fonthill Abbey.) Purchased by W. Esdaile, Esq., £99 15*s.*

A Female as Pomona. Purchased by M. M. Zachary, Esq., £93 9*s.*

1861.

The Daughter of Herodias. (From the Barberini Palace.) Purchased by Charles Scarisbrick, Esq. £388 10*s.*

AT THE KING OF HOLLAND'S SALE IN 1850.

La Columbine, or the Mistress of Francis I. Purchased by Bruni for 40,000 florins.

Leda and her Children, who are emerging from a Shell. (This picture was formerly in the Galleries of Hesse-Cassel and Malmaison.) Purchased by Roos for 24,500 florins.

These two pictures are without doubt by Leonardo.

AT M. THIBAUDEAU'S SALE IN 1857.

Death Fighting with Cavaliers. Allegorical subject, a drawing in pen and ink upon white paper. Engraved in the "Gazette des Beaux-Arts." Purchased by M. Thiers for 410 francs.

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